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# Hawaii MEDICAL JOURNAL

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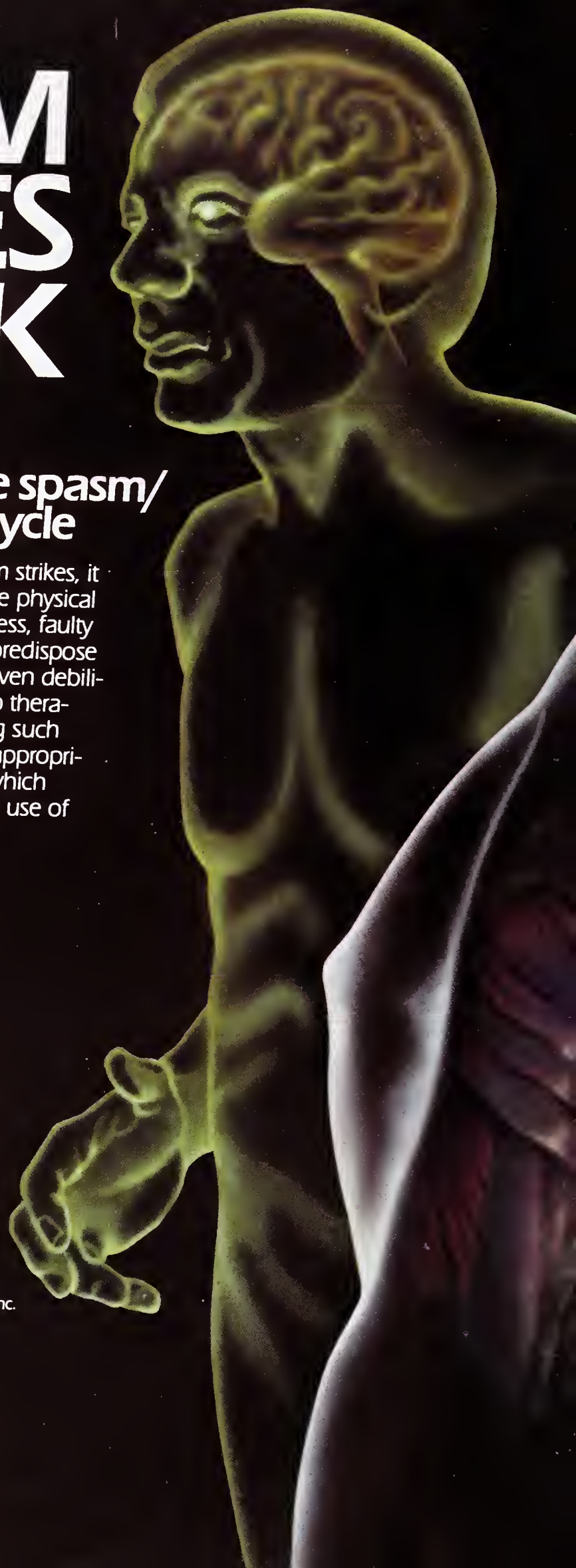


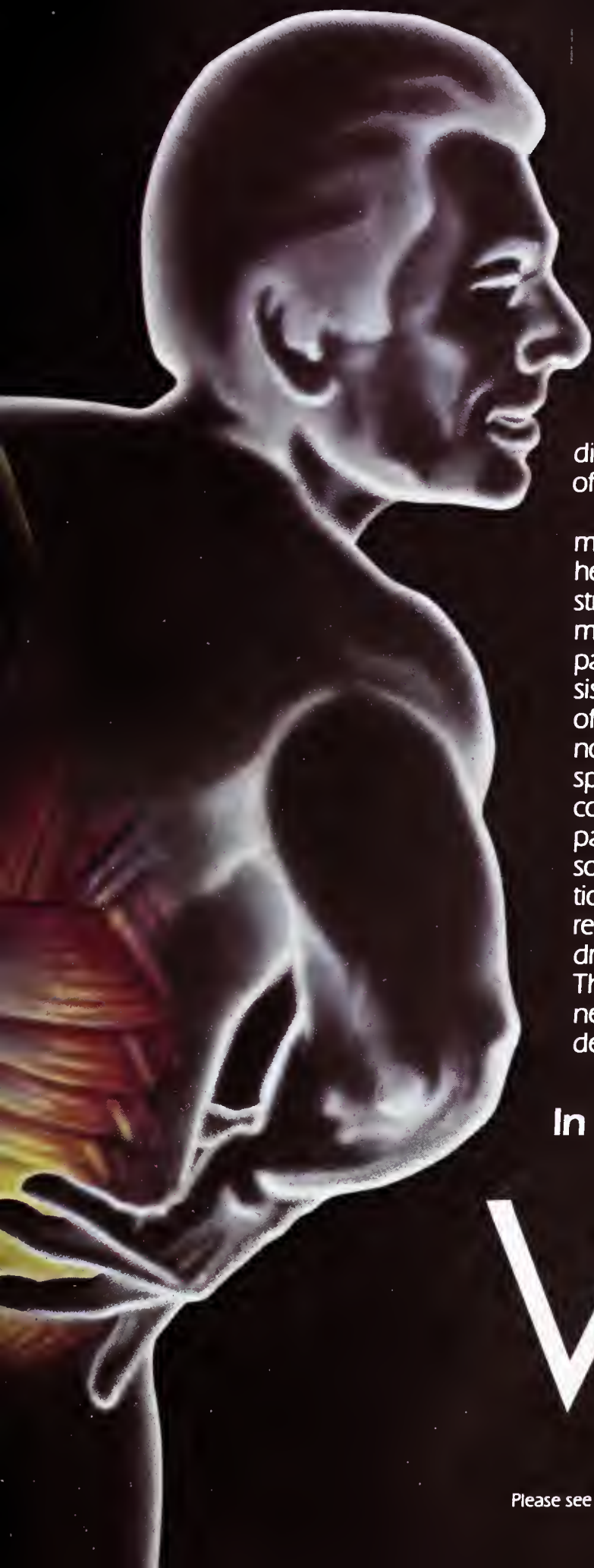
# SPASM STRIKES BACK

## Renewing the spasm/ pain/spasm cycle

Once skeletal muscle spasm strikes, it may recur—usually because physical factors (e.g., muscle weakness, faulty posture, obesity) exist that predispose the patient to this painful, even debilitating problem.<sup>1,2</sup> The key to therapeutic relief lies in correcting such factors and applying other appropriate therapeutic measures, which often include the adjunctive use of Valium® (diazepam/Roche).<sup>1</sup>

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In some patients with skeletal muscle spasm who also experience excessive anxiety, Valium (diazepam/Roche) offers a distinct dual advantage since it is indicated for the management of anxiety disorders and also adjunctively for the relief of muscle spasm due to local pathology.

In addition to helping to relieve skeletal muscle spasm due to local pathology (e.g., herniated lumbosacral discs or acute muscle strain), adjunctive Valium is indicated in major musculoskeletal diseases: cerebral palsy, upper motor neuron disorders, athetosis and stiff-man syndrome—a wider range of uses than for cyclobenzaprine, which has not been found effective in the treatment of spasticity associated with cerebral or spinal cord disease or in children with cerebral palsy. Since drowsiness, fatigue and ataxia sometimes occur, patients should be cautioned against engaging in occupations requiring complete mental alertness, such as driving or operating hazardous machinery. They should also be advised against simultaneous ingestion of alcohol and other CNS-depressant agents or drugs during therapy.

**In skeletal muscle spasm due to  
local pathology.**

Adjunctive  
**VALIUM<sup>®</sup> IV**  
diazepam/Roche  
2-mg, 5-mg, 10-mg scored tablets



# Adjunctive **VALIUM**<sup>®</sup> diazepam/Roche

Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology, spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome, convulsive disorders (not as sole therapy).

The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d., adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

**How Supplied:** For oral administration, Valium scored tablets—2 mg, white, 5 mg, yellow; 10 mg, blue—bottles of 100\* and 500.\* Prescription Paks of 50, available in trays of 10.\* Tel-E-Dose<sup>®</sup> packages of 100, available in trays of 4 reverse-numbered boxes of 25,<sup>†</sup> and in boxes containing 10 strips of 10.<sup>†</sup>

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**References:** 1. Rankin EA. *Contin Educ* 3(1):46-50, Jan 1975.  
2. When muscle spasm hobbles your patient. *Patient Care* 8(11):20-37, Jun 1, 1974

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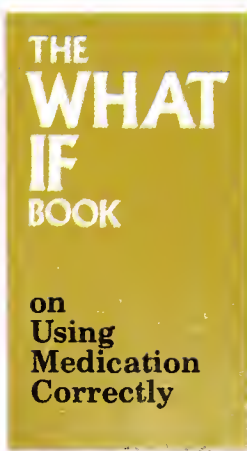
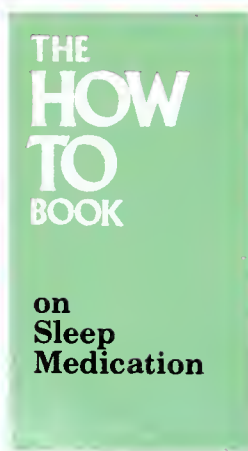
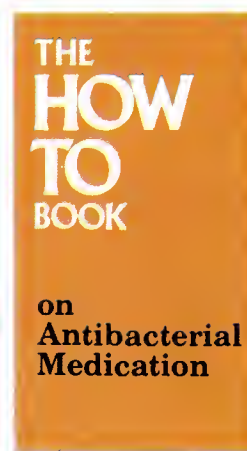
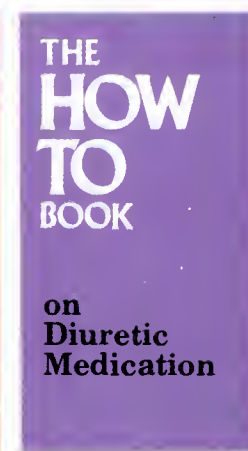
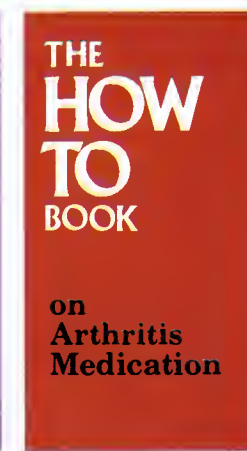
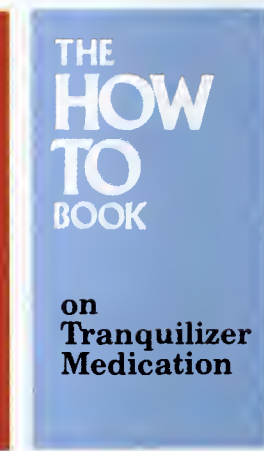
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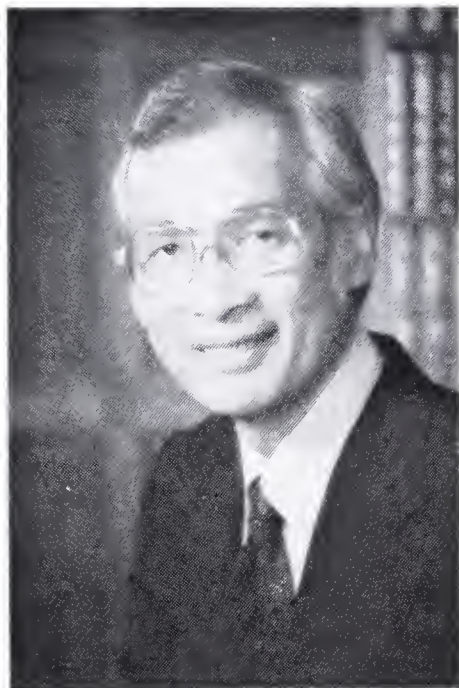
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## President's Column



As your president, I was privileged to attend a medical malpractice defense counsel seminar, November 12-13, sponsored and hosted by Marsh & McLennan and Medical Insurance Exchange of California (MIEC). Although your HMA itself does not provide medical malpractice insurance coverage, the HMA has a responsibility to keep its members informed about the various malpractice insurance options available. Your HMA has worked with the MIEC this past year on a sponsored program for a physician-owned company. Currently, more than 100 HMA members are now covered by MIEC.

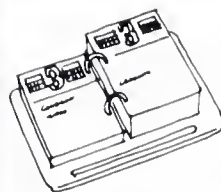
During this 2-day meeting, it was refreshing to hear attorneys speak about physicians and their problems in an extremely supportive fashion, and the information given was interesting and useful. It appears that malpractice claims in the 1980s will concentrate on OB-GYN and fetal problems; in fact, a number of seminars already have been held to educate plaintiff attorneys trying cases in these specific areas. Our concerns and suggestions will be made through Kapiolani Hospital and Dennis O'Connor.

Peer review activities, involving actual review of physicians' practices and offering suggestions to improve documentation and care, have been started by the MIEC as a means of reducing malpractice occurrences. These peer review activities will be presented in this column later in the year.

MIEC is involved with the legislative efforts of other state medical associations in monitoring bills which affect the malpractice insurance scene. It is our hope that this kind of effort could be started in Hawaii, and the HMA Legislative Committee will be given this task.

You can be assured that your HMA will continue to be vigilant in the medical malpractice insurance arena, and it is our hope that you will support the HMA in this important effort.

Calvin C.M. Kam, President  
Hawaii Medical Association



### Continuing Medical Education

#### CALENDAR OF ACCREDITED EVENTS—CATEGORY I

(Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks.")

#### LOCAL ACCREDITED PROGRAMS ONGOING

For a complete list of ongoing programs, please refer to the October 1982 issue of the HAWAII MEDICAL JOURNAL. Further information regarding ongoing events is available through the individual institutions or through the HMA's CME Department.

#### SPECIAL EVENTS

Jan. 26, 1983 Oral, Head and Neck Cancer Seminar, Maui Memorial Hospital Auditorium, 12:30 p.m. Contact: Charles Scowcroft, M.D., ph: 242-6464; Dawn Okazaki, ph: 244-5553. No fee, 4 hrs.

March 14-18, 1983 1983 Allergy and Dermatology. Contact: Symposium Maui, Inc., Box 10185, Lahaina, Maui, Hawaii 96761. At: Royal Lahaina Resort, Kaanapali Beach, Maui, Hawaii. Hr. for hr. Cat. I to 22 hrs.

March 14-18, 1983 University of Hawaii Sports Med. Course, 18 hrs. Cat. I. At: Princess Kaiulani Hotel, Waikiki. Contact: Joy Lewis, Box CE-CCECS, 2530 Dole St., Honolulu, Hawaii 96822, (808) 948-8244.

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# Comparison of Methods to Estimate Fetal Lung Maturity

Roy T. Nakayama, M.D.; Michael J. Light, M.D.; Benton H.H. Chun, M.D.; Herbert S. Uemura, M.D.; Ralph W. Hale, M.D.; and Thomas S. Kosasa, M.D., Honolulu

• Amniotic fluid specimens were obtained from 25 normal, term patients at the time of repeat caesarean section. The lecithin/sphingomyelin, % disaturated lecithin, phosphatidyl inositol, phosphatidyl glycerol, Shake Test, and OD 650 were determined on each of the samples. Ultrasound confirmation of dates was recorded. Gestational age was based on the Dubowitz criteria and development of RDS in the neonatal period.

Prospective analysis of these 25 cases revealed that the possible development of RDS cannot be eliminated even with the best of clinical parameters—good dates, confirmatory pelvic examination in the first trimester, and good prenatal care. Ultrasound confirmation of dates has not been utilized to its fullest at this institution. Even with ultrasound confirmation, however, RDS may still occur.

The L/S ratio was found to have high predictive accuracy for RDS outcome. The lung profile does not increase predictive accuracy in a controlled, normal, term population. Of the rapid screening tests for fetal lung maturity, the Shake Test appears to be superior to the OD 650.

The value of fetal lung maturity determination in modern obstetrics is now well established. The appropriate time for termination of complicated pregnancies, while avoiding respiratory distress syndrome (RDS), may be determined with techniques recently developed. This is especially important in cases of high risk, such as diabetes, pregnancy-induced hypertension, premature rupture of membranes, premature labor, isoimmunization, repeat caesarean sections and pregnancies complicated by systemic diseases.

Since the initial reports of the clinical value of the lecithin/sphingomyelin (L/S) ratio in 1971,<sup>1</sup> the L/S ratio has become the standard of laboratory fetal lung maturity determination. The predictive accuracy has been established at approximately 98% by several reports.<sup>2</sup>

Further investigation of phospholipids in the amniotic fluid revealed the correlation of fetal lung maturity with percentage of disaturated lecithin (% disat L), phosphatidyl inositol (PI) and phosphatidyl glycerol (PG); thus, the concept of the lung profile (L/S ratio, % disat L, PI and PG) by Kulovich, et al.,<sup>2</sup> which initially appears more accurate than the L/S ratio alone. The lung profile appears to be especially helpful in diabetes<sup>3</sup> and in cases where the amniotic fluid is contaminated by blood or meconium.<sup>4, 5, 6</sup> Blood and meconium invalidate the L/S ratio, but do not interfere with PI or PG values.<sup>2</sup>

Though accurate, phospholipid evaluation is time-consuming, and Clements introduced the Shake Test (foam stability) as a rapid screening test of fetal lung maturity in 1972.<sup>7</sup> It has proven to be rapid and reproducible with few false positives. The false negative rate, however, has been relatively high.<sup>8, 9</sup> More recently, spectrophotometric analysis of amniotic fluid at OD 650 has shown good correlation with the L/S ratio.<sup>10</sup>

A prospective study of controlled, normal, term patients, investigating the following parameters was done:

1—Predictive accuracy of the L/S ratio of RDS outcome;

2—Rate of false prediction of immaturity and rate of false prediction of maturity by all methods relative to L/S ratio;

3—Rate of false negatives and rate of false positives relative to RDS outcome; and

4—Comparison of the Shake Test and OD 650 as rapid screening tests of fetal lung maturity.

## Materials and Methods

A total of 25 patients, admitted for elective caesarean section between January 1, 1980, and December 20, 1980, were selected for study. The patients were between 38-41 weeks gestation, with good dates and confirmation of dates by pelvic examination in the first trimester. Confirmation of dates by ultrasonography was documented in 14 of the 25 patients. All had routine prenatal care with no complications other than history of previous caesarean section.

At the time of caesarean section, the uterine incision was made in the usual manner down to the amniotic sac. Approximately 30 cc. of amniotic fluid was removed via a 16-gauge angiocatheter introduced through the unruptured amniotic sac. This technique prevented contamination of the specimen with blood.

L/S ratio, % disat L, PI and PG were determined, using techniques described by Gluck<sup>11</sup> and Kulovich.<sup>2</sup> Techniques for Shake Test and OD 650 were done, as described by Clements<sup>7</sup> and Sbarra<sup>10</sup> respectively.

Laboratory normals appear in Table 1.

TABLE 1.

Laboratory Normal Indicator	Interpretation of Values
L/S Ratio	< 1.49 = immature 1.5 to 1.9 = transitional > 2.0 = mature
% Disaturated Lecithin	45% = immature 45-50% = borderline 50% = mature
% Phosphatidyl Inositol (PI)	< 20% = immature > 20% = mature If PG present PI may be 20% but mature
% Phosphatidyl Glycerol (PG)	None = immature Trace -2% = borderline 2% = mature
Shake Test	Positive in none or one dilution = immature Positive in 2 dilutions = intermediate Positive in 3 or more dilutions = mature
OD 650	< 0.150 = immature > 0.150 = mature

Each of the neonates was followed during the immediate post-delivery period. Gestational age, using the Dubowitz criteria and development of RDS, was recorded.

## Results

*Clinical vs. Laboratory Fetal Lung Maturity.* Although all the patients were clinically term with good dates, had had examinations in the first trimester confirming their dates, and had had good prenatal care, two patients were found to have L/S ratio less than 2 (See Table 2). One patient (Case #12) was found to have an L/S ratio of 1.9, but this neonate did not develop RDS. The Dubowitz exam revealed a 34-35 week infant. A second patient (Case #4) had an L/S ratio of 1.58 and the neonate did develop moderate RDS. The Dubowitz examination revealed a 36-38 week infant. Both L/S ratios were in the transitional range—a gray zone for predicting RDS outcome.

*Ultrasound.* Of the 25 patients, 14 had ultrasonographic confirmation of dates. Case #12, with Dubowitz at 34-35 weeks, may have benefited from this examina-

From the Department of Obstetrics and Gynecology, John A. Burns School of Medicine; Kapiolani-Children's Medical Center  
Supported in part by a grant from Leahi Trust Fund, Honolulu, Hawaii

*Neil Solomon, M.D., Ph.D.*

HILTON INN PLAZA

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Dear Colleagues:

Thank you for the thousands of inquiries I received concerning your interest in my Cigarette Smoking Elimination Program. I must apologize for the delay in my response; however, I wanted personally to make sure that this procedure had clinical merit.

Based on my clinical series, I feel that we, the medical community, should look upon this method, not as a cure-all, but as something positive that can be done to assist our patients.

Data from my clinical series, over a three year period, and data from other physicians, showed similar results. From a combined patient pool of several thousand, we observed approximately 85% of the patients stopped smoking completely for the first month. This was based on the data we received from questionnaires returned by patients. Approximately 50% remained non-smokers for up to and including three years.

This procedure is performed in one office visit. The visit usually takes 1½ hours to 2 hours. It includes: history, physical examination, Pulmonary Function Tests, EKG, blood test, urinalysis, the injection, behavioral modification tips, and a smoker's diet that I conceived. I have noticed that for optimal results, the patient must be highly motivated to want to stop smoking.

The usual and customary fee I charge patients for the aforementioned is \$385.00. Their sincere willingness to pay this amount adds to their commitment.

It would be impossible for me, using this form, to go into great detail concerning this comprehensive method. It is for that reason that I, through **Consultants in Medical Education**, have agreed to lecture to interested physicians who desire to use it.

It disturbed me greatly that as a result of the positive coverage in the lay press, including glowing testimonials from successful patients, a few, solely profit-oriented individuals, have made great personal fortunes by offering their own "lay" brand of this procedure. I feel a responsibility to the millions of cigarette smoker's who desperately want to quit. I also feel a responsibility to share with my colleagues the details of this procedure.

If you desire further information concerning this program, please direct all correspondence to **Consultants in Medical Education** at:

Post Office Box 21371

Pikesville, Maryland 21208;

or calling, 301/472-4263.

Sincerely,

  
Neil Solomon, M.D., Ph.D.



TABLE 2.

## Fetal Lung Maturity Studies in Normal Term Patients

Patient	GA (Weeks)	Ultrasound	Amniotic Fluid				Shake Test	Pediatric Evolution			
			L/S	% Disat L	% PI	% PG		OD 650	Dubowitz	Yes	RDS No
1. E.S.	40	-0-	4.1	70.37	13.27	17.70	1:2	0.174	37		No
2. J.K.	39	-0-	3.0	67.5	30.2	7.2	1:1, 1:1.3	0.067	39		No
3. D.G.	39	-0-	2.6	56.10	31.58	11.23	1:1, 1:1.3, 1:2	0.054	39		No
4. N.A.	38-39	1/17/80: 20 wks.	1.6	76.92	24.77	0.00	1:1	0.064	36-38	Moderate	
5. I.M.H.	38	-0-	3.2	75.0	23.1	24.8	1:1, 1:1.3, 1:2	0.136	40		No
6. W.D.	40	-0-	3.4	77.8	22.6	17.5	1:1, 1:1.3, 1:2, 1:4, 1:5	0.660	40		No
7. L.Y.	40	-0-	2.3	75.4	14.5	19.6	1:1, 1:1.3, 1:2	0.596	40		No
8. A.L.	38	1/4/80: Unable to obtain 5/5/80: 32 wks. 5/9/80: BPD deferred 6/2/80: BPD deferred	2.9	71.7	20.5	20.5	1:1, 1:1.3, 1:2, 1:4, 1:5	0.477	40		No
9. L.P.	40	2/27/80: 25 wks.	3.3	79.6	14.2	26.1	1:1, 1:1.3, 1:2, 1:4, 1:5	0.747	40		No
10. L.G.	40	-0-	2.6	80.5	17.1	23.8	1:1, 1:1.3, 1:2, 1:4, 1:5	0.783	40		No
11. L.F.	41	-0-	3.0	64.9	21.0	26.3	1:1, 1:1.3, 1:2, 1:4, 1:5	1.261	Term		No
12. J.C.	39	-0-	1.9	76.6	30.8	0.0	1:1	0.067	34-35		No
13. P.Y.	39	3/10/80: 23 wks. 6/30/80: 38 wks.	4.6	77.7	28.1	19.1	1:1, 1:1.3, 1:2	0.802	Term		No
14. M.B.	41	4/9/80: 23 wks. 7/14/80: 36-37 wks.	4.2	80.6	31.7	13.3	1:1, 1:1.3, 1:2	0.155	Term		No
15. L.R.	41	4/10/80: 23+ wks. 5/22/80: 31-32 wks.	5.3	87.5	21.6	28.6	1:1, 1:1.3, 1:2, 1:4, 1:5	1.260	Term		No
16. P.B.	39	3/5/80: 19 wks.	2.2	63.3	24.7	14.4	1:1, 1:1.3	0.126	Term		No
17. V.M.	40	4/1/80: 20 wks. 4/18/80: 22 wks. 5/15/80: 25+ wks.	2.5	83.3	21.6	14.4	1:1, 1:1.3, 1:2	0.060	Term		No
18. D.D.	39	8/19/80: BPD deferred 9/2/80: BPD deferred	2.9	91.7	16.5	13.5	1:1, 1:1.3, 1:2	0.144	Term		No
19. C.P.	39	-0-	3.7	94.8	26.3	0.0	1:1, 1:1.3, 1:2	0.106	Term		No
20. P.G.	39	4/24/80: 19.5 wks.	5.3	61.9	13.5	27.0	1:1, 1:1.3, 1:2, 1:4, 1:5	0.252	Term		No
21. L.L.	40	5/23/80: 24 wks.-3 days	4.8	70.0	20.5	20.9	1:1, 1:1.3, 1:2, 1:4, 1:5	0.274	40		No
22. B.S.	38	9/12/80: BPD deferred	10.0	58.3	22.2	22.0	1:1, 1:1.3, 1:2, 1:4, 1:5	0.230	Term		No
23. M.H.	39	5/28/80: 21 wks.	3.6	85.7	16.9	20.3	1:1, 1:1.3, 1:2	0.159	Term		No
24. L.G.	42	9/3/80: 33 wks.	2.9	59.9	37.3	0.0	1:1, 1:1.3, 1:2	0.107	Term		No
25. L.D.	39	-0-	3.8	84.4	22.6	23.4	1:1, 1:1.3, 1:2, 1:4	0.234	Term		No

tion had it been done. Fortunately, no RDS developed. Case #4 did develop RDS, in spite of good clinical dating with ultrasonographic confirmation at 20 weeks of gestation.

**Lecithin/Sphingomyelin Ratio.** The L/S ratio, as the accepted standard of fetal lung maturity studies, was first compared with RDS outcome. As Tables 3 and 4 show, the L/S ratio accurately predicted absence (23 cases) or presence (1 case) of RDS in 24 cases, for a 96% accuracy rate. There was one false negative (4%) and, more important, no false positives.

**Percent Disaturated Lecithin.** Percent disat L levels were greater than 50% in all cases, indicating lung maturity. Table 5 shows that the % disat L correlates well with the L/S ratio. Two patients had % disat L values consistent with fetal lung maturity with transitional values of L/S ratio. One of those cases was delivered of an infant with moderately severe RDS (Table 6). The single case of RDS represents a 4% false positive rate. Of % disat L levels, 96% predicted maturity and no RDS was noted after delivery.

TABLE 3.  
Relation of RDS to L/S Ratio

	RDS	NO RDS	TOTAL
Number of patients	1	24	25
L/S ratio 2	1	1	2
L/S ratio 2	0	23	23

TABLE 4.  
RDS Outcome Relative to L/S Ratio

	Cases	Percent
No RDS with L/S 2	23	92
RDS with L/S 2	1	4
No RDS with L/S 2 (False Negative)	1	4
RDS with L/S 2 (False Positive)	0	0
Total	25	100%
L/S ratio 2 predicts maturity		
Presence of RDS indicates lack of maturity		

TABLE 5.  
Relation of Percent Disaturated Lecithin to L/S Ratio

	Percent Desaturated Lecithin		Total
	50%	50%	
Number of patients	0	25	25
L/S 2	0	2	2
L/S 2	0	23	23



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**Phosphatidyl Inositol.** Correlation of PI with the L/S ratio was poor (Table 7). Both cases of L/S ratio less than 2 were associated with PI less than 20%, indicating immaturity. However, the PI values predicted immaturity in 7 of 23 cases with L/S ratios of 2 or more.

The relationship of RDS outcome to PI was also poor (Table 8). There was only a 4% false positive rate, but the false

negative rate of 28% was excessively high.

**Phosphatidyl Glycerol.** Correlation of the PG with the L/S ratio was good (Table 9). The PG agreed with the L/S ratio prediction of lung maturity in 23 of 25 cases (96%), 21 mature and 2 immature. RDS outcome was predicted in 2 of 25 cases by the PG when the L/S ratio indicated maturity (Table 10).

PG was highly predictive of fetal lung

maturity, with no cases of false positives. It was not as predictive of immaturity having a 12% false negative rate.

**Shake Test.** The Shake Test corresponded well with the L/S ratio (Table 11). Both cases of L/S ratio less than 2 also had Shake Tests positive to the 1:1 dilution, indicating immaturity. Of the 25 cases, 21 had L/S ratios of 2 or more and Shake Tests positive to the 1:2 dilution or more. The 2 remaining cases were positive to the 1:1.3 dilution, a transitional state.

Correlation of the Shake Test with RDS outcome was good, with only one false negative and no false positives (Table 12).

**OD 650.** The correlation of the OD 650 with both the L/S ratio and RDS outcome was relatively poor (tables 13 and 14). When the L/S ratio was less than 2, the OD 650 was also predictive of immaturity (OD 650 less than 0.150). L/S ratios of 2 or more, however, were associated with OD 650 less than 0.150 in 7 of 23 cases.

The lack of false positives was encouraging, but there was an excessively high incidence of false negatives.

## Discussion

The need for more accurate means of determining fetal lung maturity is demonstrated by this study. Under the best of clinical conditions—good dates, confirmatory pelvic examination in the first trimester and regular prenatal care—patients brought to elective caesarean section are at risk of delivering infants who will develop RDS. In this small series, 2 of 25 patients had L/S ratios less than 2 and one developed RDS.

Ultrasonography was performed on 56% of these cases. Perhaps more liberal use of this tool may help to prevent iatrogenic prematurity. Paradoxically, the single case of RDS in this series did have an ultrasound performed, which confirmed the patient's dates.

Ideally, a laboratory test of fetal maturity should have high predictive accuracy, with no false positives or false predictions of maturity. If prediction cannot be 100% accurate, error should be on the side of conservatism, thus preventing the inadvertent delivery of an infant who will develop RDS.

The L/S was found to be very predictive of fetal lung maturity with an accuracy of 96% (24 of 25 cases predicted correctly). This is comparable to the 98% found by other studies. Especially significant was the absence of false positives. The single prediction error was a false negative. Thus, the L/S ratio may uncommonly predict RDS when the fetal lungs are actually mature, but should not predict the absence of RDS when the fetal lungs are immature.

Having established the L/S ratio as the

TABLE 6.  
RDS Outcome Relative to Percent Disaturated Lecithin

		Cases	Percent
No RDS with % Disaturated Lecithin	50%	24	96
RDS with % Disaturated Lecithin	50%	0	0
No RDS with % Disaturated Lecithin	50% (False Negative)	0	0
RDS with % Disaturated Lecithin	50% (False Positive)	1	4
Total		25	100%

TABLE 7.  
Relation of Phosphatidyl Inositol to L/S Ratio

	20%	Phosphatidyl Inositol 20%	Total
Number of patients	7	18	25
L/S 2	0	2	2
L/S 2	7	16	23

TABLE 8.  
RDS Outcome Relative to Phosphatidyl Inositol

		Cases	Percent
No RDS with Phosphatidyl Inositol	20%	17	68
RDS with Phosphatidyl Inositol	20%	0	0
No RDS with Phosphatidyl Inositol	20% (False Negative)	7	28
RDS with Phosphatidyl Inositol	20% (False Positive)	1	4
Total		25	100%

TABLE 9.  
Relation of Phosphatidyl Glycerol to L/S Ratio

	None (Immature)	Phosphatidyl Glycerol Trade -2% (Borderline)	2% (Mature)	Total
Number of Patients	4	0	21	25
L/S 2	2	0	0	2
L/S 2	2	0	21	23

TABLE 10.  
RDS Outcome Relative to Phosphatidyl Glycerol

		Cases	Percent
No RDS with Phosphatidyl Glycerol	2%	21	84
RDS with Phosphatidyl Glycerol	2%	1	4
No RDS with Phosphatidyl Glycerol	2% (False Negative)	3	12
RDS with Phosphatidyl Glycerol	2% (False Positive)	0	0
Total		25	100%

TABLE 11.  
Relation of the Shake Test to the L/S Ratio

	1:1	Positive In Dilutions 1:1.3	1:2 or more	Total
Number of patients	2	2	21	25
L/S 2	2	0	0	2
L/S 2	0	2	21	23

laboratory standard of fetal lung maturity, a comparison against the 5 other methods of determining fetal lung maturity was made (Table 15).

The predictive accuracy relative to the L/S ratio is high for % disat L, PG and Shake Test. The % disat L, however, had an 8% false prediction of maturity, which may result in delivery of infants with RDS. The PG and Shake Test had the

best correlation with the L/S ratio, with high predictive accuracy and no false predictions of maturity. The Shake Test appears even better when one takes into account the fact that both cases of false prediction of immaturity were in the transitional range. There were, in fact, no false predictions by the Shake Test.

Prediction of maturity status by the PI and OD 650 do not appear to be suffi-

ciently accurate to be used without supportive evidence by other methods.

Perhaps more important than correlation with the L/S ratio, is the correlation of the 5 methods of determining fetal lung maturity with RDS outcome. Table 16 summarizes the data and includes the correlation of the L/S ratio with RDS outcome for comparison. As one would expect, predictive accuracy of % disat L, PG and Shake Test were high, just as they were when compared against the L/S ratio. The % disat L again presents the problem of false positive readings. The PG and Shake Test have high predictive accuracy and no false positives.

PI and OD 650 were not sufficiently predictive of RDS to be clinically useful alone.

Within the scope of this study, which examines a population of controlled, normal patients at term of dates; the L/S ratio alone appears to have a very high predictive index. A lung profile, which includes the L/S ratio, % disat L, PI and PG, has been put forth by Kulovich, et al.<sup>2</sup> The present data does not suggest any increased predictive accuracy of fetal lung maturity by the substitution of the lung profile for the L/S ratio alone in normal term patients. As is pointed out by Kulovich, et al., the lung profile is more valuable with abnormal pregnancies, especially those complicated by diabetes. Kulovich and Gluck have found that the absence of PG, even with an L/S ratio of 2 or more, is indicative of delayed maturity especially in Class A diabetes. The early appearance of PG may indicate maturity, in spite of an L/S ratio less than 2.<sup>2</sup>

High-risk pregnancies often require rapid fetal lung maturity determination. The L/S ratio and other components of the lung profile are very accurate but time-consuming. Since the Shake Test was described by Clements in 1972,<sup>7</sup> several reports have demonstrated relatively high predictive accuracy for RDS.<sup>11, 12</sup> In this study, lung maturity was correctly predicted in 88% of cases. As with previous reports, the false negative rate (12%) has been relatively high. Bustos reported a 30% false negative rate.

One of the technical problems inherent to the shake test is the subjectivity in interpreting bubble stability. Recent reports have suggested measurement of optical density at 650 nm as an alternative rapid screening test.<sup>10, 13</sup> Moodley<sup>14</sup> compared the predictive accuracy of the Shake Test and OD 650 and found them to be equal. Our data indicates that the Shake Test is significantly better than the OD 650 with higher predictability and lower rate of false negative.

Another indication for the lung profile is blood-contaminated amniotic fluid. Blood and meconium contamination result in erroneous L/S ratio and Shake Test

TABLE 12.  
RDS Outcome Relative to Shake Test

	Cases	Percent
No RDS with Shake Test positive in 1:2 or more	21	84
No RDS with Shake Test positive in 1:1.3	2	8
RDS with Shake Test positive in 1:1	2	8
No RDS with Shake Test positive in 1:1 (False Negative)	1	4
RDS with Shake Test positive in 1:1.3	1	4
RDS with Shake Test positive in 1:2 or more (False Positive)	0	0
Total	25	100%

TABLE 13.  
Relation of OD 650 to L/S Ratio

	0.150	OD 650 0.150	Total
Number of patients	9	16	25
L/S 2	2	0	2
L/S 2	7	16	23

TABLE 14.  
RDS Outcome Relative to OD 650

		Cases	Percent
No RDS with OD 650	0.150	16	64
RDS with OD 650	0.150	1	4
No RDS with OD 650	0.150 (False Negative)	8	32
RDS with OD 650	0.150 (False Positive)	0	0

TABLE 15.  
Correlation with Lecithin/Sphingomyelin Ratio

	Accurate Prediction	False Prediction of Immaturity	False Prediction* of Maturity
% disat L	23 (92%)	0	2 (8%)
PI	16 (64%)	7 (28%)	2 (8%)
PG	23 (92%)	2 ( 8%)	0
Shake Test	23 (92%)	2 ( 8%)**	0
OD 650	18 (72%)	7 (28%)	0

Correlation of five methods of evaluating fetal lung maturity with the L/S ratio. Total number of cases = 25. Percentages in parentheses.

\* L/S ratio in transitional range in all cases  
\*\* Shake Test in transitional range

TABLE 16.  
Correlation with RDS Outcome

	Accurate Prediction	False Negative	False Positive
L/S Ratio	24 (96%)	1 ( 4%)	0
% disat L	24 (96%)	0	1 (4%)
PI	17 (68%)	7 (28%)	1 (4%)
PG	22 (88%)	3 (12%)	0
Shake Test	22 (88%)	3 (12%)*	0
OD 650	17 (68%)	8 (32%)	0

Correlation of six methods of evaluating fetal lung maturity with RDS outcome. Total number of cases = 25. Percentages in parentheses.

\* Includes two cases of transitional Shake Tests



results.<sup>4,5</sup> PG values are not affected by blood.<sup>2</sup>

The next phase of this study will investigate the effect of complications of pregnancy on laboratory methods evaluating fetal lung maturity.

### Conclusions

1—The possible development of RDS cannot be eliminated even with the best clinical parameters—good dates, confirmatory pelvic examination in the first trimester and good prenatal care.

2—Ultrasound confirmation of dates has not been utilized to its fullest at this institution. Even with ultrasound confirmation, RDS may still occur.

3—The L/S ratio has high predictive accuracy for RDS outcome. Using accepted normal values, the false negative rate should be low and the false positive rate nil.

4—The lung profile does not increase predictive accuracy in a controlled, normal, term population.

5—The Shake Test appears to be superior to the OD 650 as a rapid screening test in our population.

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# Letter FROM the Editor . . .

Norman Goldstein, M.D.  
119 Merchant St. 504  
Honolulu, 96813

Dear Norm:

As I write this letter, the November issue of the HAWAII MEDICAL JOURNAL is now in the "blue-line" stage of production, and I have as usual, at Doris Jasinski's prudent suggestion, corrected galley proofs and page proofs, and the blue-line—she decided that the surprise had better be advanced to the galley proofs rather than the finished mag, since it would obviate any disappointment I might find in the way of easily corrected errors (there were several, as it happened—not counting Harold Johnson's unfounded allegation that I can't sing, which I let stand of course: I deleted nothing!).

To tell you that I'm astonished, and gratified, and grateful to you for your generous and marvelously well-directed efforts to arrange this extraordinary honor for me, is just a massive understatement, Norm. If anyone had sug-

gested to me that all those colleagues would be willing to offer a paper for publication in a *Festschrift* for me, I'd have said "Nonsense; it would never work out!"

You set your sights on an impossibly high mark, and you hit the bullseye anyway. I never would have dreamed it could be done at all, let alone done so extraordinarily well. It must have taken you many hours of effort in correspondence. No one has ever done a kinder and more generous thing for me; I rate it with my election to ADA, and my selection for the American Board, and finding Jeanne, as one of the four most meaningful and important events in my life. To be—well, not a literal "prophet," but—a physician with such honor in his own country, is an event very few individuals can ever hope to experience. Jeanne and the rest of my family, and my nurse for 35 years, Muriel Muraoka, thank you. I thank you! This issue will be the most treasured item in my memorabilia. It's overwhelming!

Sincerely,  
Harry L. Arnold Jr.



Harry L. Arnold Jr., M.D.

Watch out for melanoma of the sole or toenail beds in black patients: they have it far oftener there than whites do and it is far more aggressive in them, say Douglas Reintgen and colleagues at Duke, in the October 15 JAMA.

\*\*\*

Small breast cancers without axillary nodes can be managed just as well by lumpectomy and radiation therapy as by radical mastectomy, according to a study at M.D. Anderson Hospital, reported in the October 15 JAMA. An important advantage is that lumpectomy doesn't diminish the husband's interest in sex. Mastectomy generally does.

\*\*\*

In the same issue, J. Ace Brown of Augusta says to tell patients who have trouble swallowing capsules to tilt their head forward instead of back, so it will float toward the pharynx instead of forward toward the lips.

\*\*\*

Cardiologists and family practitioners and internists: call the local Hewlett-Packard office and ask about the new HP 7825F computerized arrhythmia information-management system, the 5th upgrade of their algorithmic method.

\*\*\*

MMM announces a small disposable one-staple skin stapler, the Precise One-Shot.

\*\*\*

Would 98% less transmission loss in the ultraviolet filter of your laboratory instruments that use UV radiation for chromatography and electrophoresis be of interest to you? And a filter life of more than 2,000 hours? UVP, Inc., can now supply retrofit filter replacements with these astonishing qualities. They're at Box 1501, San Gabriel, Calif. 91778.

\*\*\*

An improved B-scan arm assembly for General Electric's Satason ultrasound system has just been announced. Publication 5310A, available from them at Box 11944, Milwaukee, Wis. 53201-0944, tells all about it.

\*\*\*

Would you like to monitor and record 24 hours of continuous ECGs on as many as 12 ICU/CCU patients at once? Model 412, by DelMar Avionics, will do it for you. Write to them at 1601 Alton Ave., Irvine, Calif., 92714, if you're interested.

\*\*\*

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A breathable liquid-repellent "fiber" finish can be applied to non-woven surgical fabrics and heat-cured for optimal performance, 3M announces. Call (in Honolulu) 422-2721, for information. Ask about Scotchban protector FC-838.

\* \* \*

Ergotron, Box 17013, Minneapolis, Minn. 55417, announces its new Greenfield Babin-ski reflex hammer, with 3 different-density striking rings.

\* \* \*

Ask Abbott's Diagnostics Division D-49B, Abbott Park, North Chicago, Ill. 60064, or call toll-free (800) 323-9100, if you'd like a diagnostic monograph on rubella, called Laboratory Advances in Rubella Diagnosis.

\* \* \*

NIOSH/MSHA has approved the AT30, Racal Airstream's new Flowstream Thrifty Top Supplied-air System, for paint sprayers and others who might breathe noxious materials. Its address is 730A Grove Rd., Frederick, Md. 21701.

\* \* \*

A practical, detailed guide on writing medical papers and getting them published is available from Edward J. Huth, editor of the Annals of Internal Medicine. Write Karen Kietzman at 3501 Market St., Philadelphia, Pa. 19104.

\* \* \*

MED-COACH, a new computer-based training tool for hospital nurses, is announced by Shared Medical Systems, Box 675, King of Prussia, Pa. 19406.

\* \* \*

3M has done it again: its new Steri-Drape Femoral Angiography Pack No. 1096 will provide what's needed for most catheterization procedures. Call 422-2721 for information, and mention that you saw it here, please!

\* \* \*

While you're on the phone you might want to ask 3M about its new pouch to collect fluid-runoff during arthroscopy of the knee. It's No. 1005.

\* \* \*

Questions and answers about infant formula are available from the Infant Formula Council, 5775 Peachtree-Dunwoody Road 500-D, Atlanta, Ga. 30342. Helpful!

\* \* \*

In addition to the USP DI, Patient Medication Instruction (PMI) sheets, to be used as supplements to oral instructions, are being prepared by the AMA Education and Research Foundation. Dr. Robert Moser's dream of "patient package inserts" written by physicians, to instruct the patient rather

than to unnecessarily frighten him or her, seems to be nearer to realization. They aren't quite ready yet.

\* \* \*

Dopamine hydrochloride, ready to administer, is now available from Abbott Laboratories for treatment of shock related to myocardial infarction, accidents, or surgery. It has an 18-month shelf life.

\* \* \*

Speedy diagnosis of cervical and urethral gonorrhea—in as little as an hour!—is now possible through Gonozyne, Abbott's new solid-phase EIA (enzyme immunoassay) test. It may identify asymptomatic carriers, and is as specific as, and more sensitive than, cultures, transport problems being eliminated.

\* \* \*

Drugs for asthma are reviewed in depth and in detail in the September 17 issue of the Medical Letter, Vol. 24, Issue 618, pages 83-86.

\* \* \*

An office optical stimulation instrument, called NOS-30, is offered by ICS Medical Corp. Targets move smoothly without moving parts. Write them at 1785 Cortland Court, Addison, Ill. 60101.

\* \* \*

Don't overlook Ralph Crawshaw's moving account of a visit to a leprosarium in Bombay in the August issue of JAMA. You can request a reprint if you like.

\* \* \*

Physician Meets the Press is the title of an informative guide for doctors who must interact with media representatives, published by Grody-Tellem Communications, Inc., 9100 S. Sepulveda Blvd., 200, Los Angeles, Calif. 90045.

\* \* \*

Abbott announces the LifeCare 1000 Controller to regulate IV flow rates electronically.

\* \* \*

Do you make house calls? Safeguard Business Systems hopes so, and they offer an aluminum writing board which will hold 25 3-part or 40 2-part Safeguard Quick Claims, designed for your specialty and for use as an insurance claim form or an itemized bill. Write them at Box 6000, 400 Maryland Drive, Fort Washington, Pa. 19034.

\* \* \*

A resource directory for physicians with any physical disability is being compiled by the St. Paul-Ramsey Medical Education and Research Foundation (640 Jackson St., St. Paul, Minn. 55101). Earlier request for responses from "handicapped" physi-

cians brought fewer than 200 responses; they want to hear from every physician who has even a slight physical disability.(?) They are trying to expedite the rehabilitation and return to practice of about 1% of the physicians in the U.S. Even minor disabilities concern them.

\* \* \*

Davis & Geck's new Appose disposable skin stapler is now available in regular width; it has been improved in several respects and comes in a 25-staple model for wounds up to 6 inches, or 35 for wounds up to 9 inches. You'll need the Staple Remover as well. Call your Lederle rep for information.

\* \* \*

If you have an Autosector I, Autosector Mobile Care Unit, or an EPD 1200S digital B-scanner, you'll want to get Technicare Ultrasound's new Ultrasound Sterile Procedure Kit for fine needle biopsies and for puncturing renal cysts under real time scanning guidance. Write them at 90 Inverness Circle, East, Englewood, Colo. 80012.

\* \* \*

If you're not happy with your electrosurgical equipment's capability, better look into Davol's new System 5000, which they say "does everything." Write to C.R. Bard, Inc., Cranston, R.I. 02920, or call (401) 463-7000, for information.

\* \* \*

A free copy of a booklet explaining IRAs, and the use of mutual funds for them, is available from Investment Company Institute, 1775 K St. NW, Washington D.C. 20006.

\* \* \*

Starting practice soon? "Establishing a Medical Practice" is available for \$2 from Small Business Reporter, Bank of America Dept. 3401, Box 37000, San Francisco, Calif. 94137. It explains how to plan, finance, and operate your own office. You can look at a copy of it in the HMA office at 320 Ward Ave.

\* \* \*

The 1983 edition of the USP DI (U.S. Pharmacopoeia Drug Information), published in July, is available in two volumes for \$37.95 from USP headquarters or our State Pharmacy Association. Volume I is advice for you; Volume II is what you might want to tell the patient. The USP DI Updates from July 1982 to December 1983 (9 issues) costs \$9, and you might want it as well. See a copy in the HMA office.

\* \* \*

Your beeper may work a great deal better when you're in your car if you improve its performance with a Beeper Booster—an outside antenna with an internal mount for your beeper, from The Antenna Specialists Co., 12435 Euclid Ave., Cleveland, Ohio

44106. It costs \$28.95. There are several models.

\* \* \*

Training options for CT technicians are described in Publication 5383 from General Electric Co., Medical Systems Operations, Box 11944, Milwaukee, Wis. 53211-0944.

\* \* \*

Abbott Laboratories announces Quantu-matic, an automated dual-wavelength spec-trometer, for Abbott's enzyme immunoas-say tests. It now reads HBsAg, HBeAg and anti-HBe, CEA-EIA, ferritin, rubella IgG, and rubella IgM, and will soon add Gono-zyne for gonorrhea and Beta HCG for pregnancy.

\* \* \*

Ask the Australian Trade Commissioner if you're interested in a new, flexible, non-disposable rubber mat to awaken an enu-retic child—or adult. The Medi-Clean Enuresis Company produces it. Write the commissioner at 636 Fifth Ave., New York, N.Y. 10111.

\* \* \*

An improved all-silicone tracheostomy tube is announced by Argyle Tartan R; write Sherwood Medical, Dept. AK, 1831 Olive St., St. Louis, Mo. 63103.

\* \* \*

A new blood chemistry analyzer system, VersaChem, with 24 endpoint and kinetic chemistries in its programmable memory, is announced by Harleco Diagnostics, 480 Democrat Road, Gibbstown, N.J. 08027.

\* \* \*

3M offers a new Steri-Strip Antimicrobial Skin Closure which self-sterilizes by release of iodine to the skin; it comes in 3 sizes, 1/4 x 3, 1/4 x 1 1/2, and 1/2 x 4 inches. You can call 3M (it's listed under Three in the phone book!) at 422-2721, and ask.

\* \* \*

Right-to-Lifers please note: forcing wom-en back from legal abortions to illegal abortions or unwanted childbirth would surely cause many maternal deaths. Legal abortions were 5 times safer than child-birth from 1972 through 1974, and 10 times safer from 1976 through 1978—when 1.4 million abortions were done and only 7 maternal deaths resulted. (JAMA, July 9, 1982).

\* \* \*

Amko, at 41 Oak Ave., Bellmawr, N.J. 08031, announces the Jarcho self-retaining insufflation catheter for tubal patency testing.

\* \* \*

Audio cassette tapes on various problems in rehabilitation, recorded during the 2nd annual International Conference on Re-habilitation and Independent Living, at

Daniel Freeman Memorial Hospital, Inglewood, Calif., are available; for a list of them write Susan B. Haskell, Box 100, Inglewood, Calif., 90306-0008.

\* \* \*

Brochures to familiarize your elderly pa-tients with Medicare benefits may be obtained for \$20/100 or \$90/500 from ASIM, Literature Order Dept. MJ, 1101 Vermont Ave. NW, Suite 500, Washington, D.C. 20005. You can have a sample copy free, if you'll send a self-addressed, stamped, legal-size envelope. It's very well done.

\* \* \*

Interested in scan projection radiography? Write for Publication 5268, a 4-page booklet on it: General Electric Co., Medi-cal Systems Operations, Box ("P.O." Box: is there any other kind?) 11944, Milwau-kee, Wis. 53201-0944 (the new ZIP code).

\* \* \*

Patient monitors for the CCU and ICU keep improving; call 526-1555 and ask the local Hewlett-Packard office about their new 78351A model.

\* \* \*

Loniten (minoxidil) is better than any-body first thought: FDA has approved the claim that it may reverse both enceph-a-lopathy and retinopathy in hypertensive patients.

\* \* \*

USP Dispensing Information (the USP DI) for 1983 is now out in 2 volumes: one for the doctor and a second for the patient. A Japa-nese edition is available. Hopefully, we may soon be able to retire that compendium of bad news, the PDR.

\* \* \*

A Visiting Faculty Program accredited for 6 CME credit hours, on colorectal cancer, is announced by Sloan-Kettering Cancer Center. Call Barbara Weinrib or Barbara Anderson at Health Learning Systems (201) 338-3615 for details.

\* \* \*

Do you have an eye movement recorder that needs precise calibration? Take heart: the NC-10, a unique light bar and control con-sole system, is just what you need. For elec-tro-nystagmography or electro-oculogra-phy, nothing else will do. ICS Medical Cor-poration, 1785 Cortland Court, Addison, Ill. 60101 can supply it.

\* \* \*

UroTec System Corporation's new "PARR" closed bladder irrigation system can reduce postoperative bladder infec-tions from nearly 10% (with open systems) to 0.2%. Call them at (800) 245-4484, and if you can't get through, call Sunil Wadhvani collect at (412) 963-6010; he furnished the "800" number.

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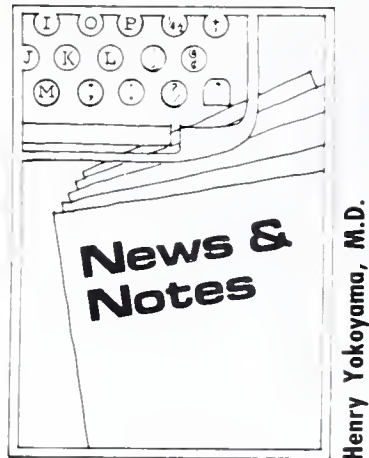
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## Oncology Dialogue

The epochal court case of asbestos-induced mesothelioma was in session. Pathologist **Larry McCarthy** says that fellow pathologist **Grant Stemmerman** should write a book entitled, "The Saga of Tristan Nobriga" (The PHNY employee who died in 1979 of mesothelioma).

The conference was on another asbestos-related case of mesothelioma. A 24-year-old pipefitter had chest X-rays showing complete opacification of the L. lung, according to pulmonologist **Ed Morgan**. Moderator **Glenn Kokame** showed Hawaii mesothelioma statistics for the period 1960 to 1980: mesothelioma, pleura, 42 cases; mesothelioma, pericardium, 1 case; mesothelioma, peritoneum, 11 cases; (total 54 cases). When Glenn asked about therapy, radiotherapist **Ed Quinlan** stated flatly: "Radiotherapy has no part in the treatment of mesothelioma." Chemotherapist **Kevin Loh** was equally pessimistic: "My experience with mesothelioma is poor. Even with high doses of Adriamycin, it is a relentless, progressive tumor." Stemmy was curious about the tuberculoid granuloma in the LUL tumor mass. Ed Quinlan commented on the CAT scan, "This is a 5th generation CT scan, but it still can't differentiate between mesothelioma and tuberculoid granuloma." Neurosurgeon **Max Urata** whispered, "But in Hinkley's trial, CT scans showed that he had schizophrenia..."

Our mesothelioma expert, **Takushi Hayashi**, presented his peerless EM slides of asbestos bodies in the tumor body with his usual precise commentary... **Larry McCarthy** related how **Glenn Kokame** was asked in court if he knew any other causes for mesothelioma and Glenn specified, 2 etiologies: asbestos and idiopathic. "If I knew of any other causes I could become famous." Pulmonologist **Ed Morgan** lectured at length on mesothelioma and other asbestos-related diseases, at the conclusion of which humorist **Max Urata** asked innocently, "Is it true that asbestos is used for filtering beer?"

Ed pointed out that in WW II, even gas masks had asbestos in their filter canis-

ters... He also mentioned baby powder, brake linings, roofing material et al... **Grant Stemmerman** asked that all lung tumor cases have a careful occupational history included before the patient dies... Grant may be writing that book, "The Saga of Tristan Nobriga" yet...

\* \* \*

A 24-year-old P2G2 Hawaiian woman had a quadrant excision of a 5-mm tumor of the L. breast removed by surgeon **Jim Nishi**. When the path report showed an infiltrating ductal type adenoCa, Jim proceeded with a modified radical.

KMC pathologist **Larry McCarthy** declared solemnly: "Of the 29 axillary nodes, 29 were positive." In the history, an outside mammogram done 6 months earlier had been negative. Radiologist **David Sakuda** defended the outside radiologist: "In young dense breasts, we would have missed it too..."

Moderator **Glenn Kokame** asked: "Did smoking have anything to do with the cancer? She may have been born with a cigarette in her mouth..."

Pathologist **Grant Stemmerman**: "Mutagens have been picked up in mammary tissue after smoking... Hawaiian women have the highest incidence of breast-cancer in the world... Glenn asked, "What's the youngest woman you have seen with breast cancer?"... Stemmy: "I think a 23-year-old Japanese woman in Hilo... It was discovered during her honeymoon..."

Surgeon **Francis Oda**: "How about doing a frozen and going right into a radical?" A radiologist responded: "You can do a frozen and get right into radiation therapy..."

Chemotherapist **Kevin Loh**: "In the preop workup, it was considered Stage I and bone scan was not recommended. Both the estrogen and progesterone receptors were negative..."

Radiotherapist **Ed Quinlan**: "This is the type of case I'll gladly turn over to anyone..." Kevin added: "I would recommend systemic chemotherapy including Adriamycin..." Glenn turned to **Mel Kaneshiro**: "How would you treat it?" Mel begged off with: "I didn't know I was going to treat her..." The usual humor and frivolity was missing... There was only the sense of pervading sadness and frustration and helplessness.

\* \* \*

A 53-year-old man was seen for L. hip pain. Hip X-rays showed cystic changes and a chest film showed multiple lesions of the R. lung. Exploration proved the lesions to be mesothelioma... Moderator **Glenn Kokame** commented: "Dr. Hayashi (KMC pathologist) is the world's expert on mesothelioma"... Pathologist **Grant Stemmerman** added: "You need a good occupational history

... Forget the social history..." The nurse reading the history remarked: "He's a laborer." Stemmy: "Laborer at what?" Attending physician **Vic Mori** came to her rescue: "He doesn't communicate well."

Radiologist **David Sakuda** commented gloomily: "The lesion is between the 1st and 2nd ribs. There is no fibrosis of the lungs. L1 on the left side has dissolved... The bone scan shows L1 to have a 'cookie bite' lesion. The liver is enlarged, with multiple defects."

Further discussion of mesothelioma and asbestosis ensued... Glenn: "Mesothelioma has no relation to smoking, but lung cancer can be related to asbestos and smoking..." **Takushi Hayashi** added: "Ca of the larynx may be related to asbestos."

\* \* \*

A 23-year-old Japanese woman was seen at the Emergency Room on 3 occasions with urinary retention. Then she developed weakness, first of her right leg and then of her left. Urologist **Masaru Koike**, who had done a cystometrogram on the puzzling case, commented: "It's not common to have urinary retention in a young female." He called in neurosurgeon **Thomas Sakoda**, who did a laminectomy of L2 to S1. Radiologist **David Sakuda** reported on the myelogram: "These nodular lesions of the lumbar spine appear to be associated with the nerve roots." A sonogram showed what appeared to be R. ovarian cysts. Pathologist **Larry McCarthy**: "There is nothing common about this lesion. Dr. Hayashi (fellow pathologist) and I were around in the afternoon when Dr. Sakoda sent down the specimen... It was a highly cellular lesion... Several of us felt that it looked like a seminoma, but seminomas are not found in women. We thought of embryonal dysgerminoma... but we called it an undifferentiated carcinoma... **Takushi Hayashi** added, "After extensive electron microscopic studies, including staining for alpha fetoprotein, we came out with the differential diagnosis of embryonal carcinoma of some type, may be local or metastatic." **Grant Stemmerman** was for primary melanoma...

**Bob Oishi** proposed a laparoscopy of the ovary and moderator **Glenn Kokame**, who was obviously pleased by the rare confusion of the pathologists, commented: "Then the next step is laparoscopy of the ovary... Is it my impression that the pathologists have no definite diagnosis?" Stemmy replied, "I think each one of us has his own idea... Even if it were sent out, I wouldn't agree with their opinion..." Larry remarked, "I would call it a germ cell tumor with embryonal cells from the gonads." Grant: "I'm for ependymal blastoma." Glenn, to change the subject asked oncologist **Kevin Loh**, "Kevin, how about intrathecal



chemotherapy?" Kevin carefully skirted the topic: "Not with tumor at this site. Perhaps systemic chemotherapy, but I would argue for radiation therapy. Certainly she should have a bone scan and a CAT scan of the head." So, much ado about nothing . . . Everyone was agreed it was a tough case . . . Poor gal . . .

## Life in These Parts

Plastic surgeon **Stephen Schlesinger** in Kahului, Maui, uses the collagen implantation technique (approved by the FDA last July) for removing age lines, burn scars, skin grafts, bone defects and other skin defects. So do some dermatologists.

Honolulu's inflation rate, as measured by the Consumer Price Index, was far ahead of the national level in January and February as prices rose 1.5%. Price indexes for food, apparel, housing, medical care and entertainment all rose faster in Honolulu than nationally.

ALAH (The American Lung Association of Hawaii) reported that seniors in Big Island high schools are smoking marijuana at a higher rate than the national average. One third of the seniors surveyed said they smoke marijuana compared with 19% smoking tobacco . . . 26% described themselves as heavy marijuana smokers (*i.e.* at least once a day).

Straub thoracic surgeon **Niall Scully** has operated on two cases recently of heart worm infections. The first case was a 58-year-old Honolulu woman, in 1980, and the second case a 47-year-old carpenter, in April.

**Lee Jacobs**, at Kaiser Medical Center's infectious disease center, feels that we had an influenza epidemic of sorts back in March as predicted by the Center for Disease Control in Atlanta, Ga. . . . The symptoms were a dry cough which persisted for many, many weeks . . .

**Harry Davis**, Honolulu Medical Group psychiatrist, recently obtained Hawaii's first psychological testing computer, which already has 7 standardized tests and other tests to determine mental ability, brain impairment, personality, and vocational aptitude . . . Besides being less intimidating to the patient, the computer cuts the cost of testing by 25% and the results are available within minutes . . . Harry feels that the computer testing results may be valuable to non-psychiatrists as well . . .

The House Select Committee on Aging reports that federally funded efforts by states to stop fraud in the nation's \$24.5 billion Medicaid program has been an "unmitigated disaster."

SHPDA has approved a \$4 million medical clinic in Wailuku, to be built by Kaiser-Permanente Medical Care Program. The new clinic will replace two smaller Kaiser clinics in Wailuku and in Kahului . . .

The two Kauai District Health Office buildings in Lihue have been smoke-free for 4 years. Anyone lighting a cigarette, even a boss from Honolulu, is politely asked to smoke outside, where big, red five-gallon cans are provided for the butts. The smoking ban was instigated by department public health nurses, especially now-retired supervisor **Nellie Hiyane**, and Kauai District Health Officer **Robert Melton** says, "The policy was established almost by consensus . . . Nobody could come up with any good reason not to do it."

\* \* \*

## Miscellany

It was the year 2204 A.D. . . . The janitor for the 9th floor of the commercial building was getting tired of his job of 20 years . . . So he had a clone of himself made at the local clone factory . . . The only difference was that his clone would make obscene gestures to every woman he met . . . The 9th floor superintendent warned the janitor that his clone had to stop harassing the women workers or he would be forced to fire him . . . The janitor called in his clone and gave him a good father-to-son lecture. Next day, his clone was again reported to the superintendent—who forthwith fired the janitor. The janitor was so angry he rushed up to the 9th floor where the clone was working and pushed the clone off the balcony and the clone fell to his death. The janitor was immediately arrested and charged for "Making an obscene clone fall." (As told by **Claire Loo**, our favorite MSD rep.)

Ying and Yang of Red China came to the U.S. to study restaurants in New York . . . Ying was amazed at the stainless steel kitchens, the immaculate cleanliness and the array of modern equipment . . . Yang inspected the garbage cans in the back and commented, "Oh, what waste! What they throw away can feed 200 people in my village." So restaurant after restaurant, Ying would marvel at the beautiful interiors, the cutlery, the table settings, the marvels of the 20th century incorporated in the kitchens, while Yang was more interested in the contents of the garbage cans and moaned, "What a wasteful people the Americans are!" A young Italian couple was having a beef in their apartment above a restaurant and the husband pushed his wife out the window . . . She landed kerplunk! in a garbage can. Along came Yang who examined the unconscious girl from head to toe . . . "See how wasteful Americans are . . . This one's still good for 20 more years." (As told by **Ed Kagihara**, MC at the PMCL golf tournament banquet at Makaha.)

## Book Review



Ed: Douglas G. Massey, M.D.

**Basic and Clinical Immunology**, 4th edition. By D.P. Stites, J.D. Stobo, H.H. Fudenberg, and J.V. Wells. 775 pp., index. Los Altos, Calif., Lange, 1982. \$22.00

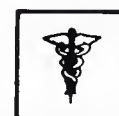
Three American editors and one Australian, with 54 contributors drawn mostly from all over the U.S. but also from France, Belgium, and Finland, have compiled this revised and considerably enlarged 4th edition of basic immunology, immunologic laboratory testing, and clinical immunology, with 324 pages, 70 pages, and 440 pages, respectively, plus an extensive glossary of terms and another of acronyms and a 26-page index. Like all Lange books, it has a soft cover and paper is of good quality, though uncoated; illustrations and diagrams are numerous and clear.

Basic immunology has become so extraordinarily complex that a practitioner can hardly sift out the useful from the purely academic information; a reader like me quickly becomes lost in the labyrinth. The same is largely true of immunologic laboratory testing. But the chapters on clinical immunology are invaluable, a mine of useful information, much of it intensely practical and virtually all of it, so far as one can infer from the qualifications of the authors, authoritative and of course—with revisions every 2 years, up-to-date.

A new chapter on autoimmunity, by Argyrios Theofilopoulos of the Scripps Clinic, contains 32 pages of mind-expanding information. Thomas Provost of Johns Hopkins has an excellent chapter on skin diseases of immunologic cause, which suffers a little bit by reason of discussing mainly staphylococcal scalded skin syndrome under the heading "Toxic Epidermal Necrolysis," but this has been in a state of confusion for years and will surely be corrected in the next edition.

The book is, like all Lange books, a great bargain, and highly recommended.

Harry L. Arnold Jr., M.D.

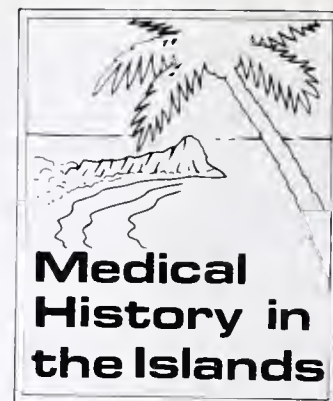




# Hematologic Disorders Unique to Hawaii

## A Quarter Century of Hematology in Hawaii

Robert T.S. Jim, M.D., Honolulu



Hematologic disorders in Hawaii over the past 25 years have shown certain features unique to its ethnic population. Most prevalent has been a high incidence of thalassemia among the Chinese and Filipinos,<sup>1,5,7,9,16,19</sup> an association seen in high incidence in Southeast Asia. Both the alpha and beta thalassemia forms have been found, and all degrees of clinical severity from the mildest heterozygous to severe homozygous forms.

All expressions have been observed for the alpha thalassemia, including the silent gene (alpha thalassemia<sub>2</sub>), the minor gene (alpha thalassemia<sub>1</sub>), the intermediate form (alpha thalassemia<sub>1</sub> alpha thalassemia<sub>2</sub>) and the homozygous hydrops fetalis form (alpha thalassemia<sub>1</sub> alpha thalassemia<sub>2</sub>), confirmed by globin chain synthesis and alpha gene deletion in some individuals. Since discovery of the first case of alpha thalassemia intermedia (Hemoglobin H Disease) 23 years ago,<sup>1</sup> a registry of these cases now includes 87 to date.

Abnormal hemoglobinopathies have been found among certain ethnic groups and show correlation between racial types and specific kinds of abnormal hemoglobins.<sup>2-4,6,9,14,17,18</sup> Sick cell trait and hemoglobin C trait have been found in Puerto Ricans and Portuguese, traceable to the African component found in these groups. Hemoglobin E trait has been found in Chinese and Filipinos, and among various other Southeast Asian groups.

Three new abnormal hemoglobins have been found: Hemoglobin G Honolulu in a Chinese,<sup>4</sup> Hemoglobin J Honolulu in a Hawaiian-Chinese-Caucasian,<sup>2</sup> and Hemoglobin G Waimanalo in a Filipino.<sup>17,18</sup> In these 3 individuals, the abnormal hemoglobin was found incidentally or associated with only mild clinical disease.

G6PD deficiency has been found in the Chinese and Filipinos in Hawaii.<sup>8,10,11,13</sup> New variants have been found in a Chinese<sup>11</sup> and in a congenital nonspherocytic hemolytic anemia in a Caucasian.<sup>15</sup>

Thalassemia, abnormal hemoglobinopathy and G6PD deficiency have not been

found in Japanese, Koreans, or pure Hawaiians, although isolated cases of abnormal hemoglobinopathy and thalassemia have been reported in Japan. Part-Hawaiians are subject to the abnormal hemoglobinopathies or thalassemias usually found among the other races of their ancestries.

As in Asia, a similarly low incidence of pernicious anemia has been found. No higher or lower incidence or clustering of leukemia has been observed.<sup>22,23</sup> The incidence of adult acute leukemia appears to be increasing in Hawaii, as throughout the world.<sup>24</sup> A lower incidence of chronic lymphocytic leukemia in Chinese and Japanese has been seen in Hawaii,<sup>22,25</sup> similar to its rarity in Asia. The survival for chronic lymphocytic leukemia in Japanese may be poorer than in other races.<sup>25</sup>

In 1969, retrospectively, all lymphoma deaths on Oahu were studied for a 14-year period, 1955-1968, for a total of 230 cases. Hawaii orientals did not have lower

lymphoma rates than did Hawaii whites. Hawaii orientals had higher rates for lymphosarcoma and Hodgkin's disease than for reticulum cell sarcoma; this was like Hawaii and U.S. Mainland whites, rather than like Asian Asians.<sup>27</sup>

Hematologic disorders in Hawaii have otherwise shown no other apparent peculiarities or differences in incidence or clinical behavior.

Finally, in 1921, in the Chinese Medical Journal, Dr. Richard H.P. Sia, a prominent medical practitioner in Honolulu, reported that a drop of serum from patients with kala azar produced a white precipitate in a test tube of distilled water.<sup>28</sup> Later, in 1944, when Waldenstrom first described a new disease, macroglobulinemia, he noted a drop of macroglobulinemic serum similarly produced a white flocculent precipitate in distilled water, and since then, this test has become known as the Sia water test for macroglobulinemia.<sup>29</sup>

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# In-Flight Transtelephonic Electrocardiogram Transmission

Danelo Canete, M.D., and Kevin Hara,\* Honolulu

*• In-flight air-to-ground transtelephonic electrocardiogram transmissions were sent from a corporate jet to a receiving base station. A standard Cardiobeeper transmitter and receiver was utilized and transmission was gained through conventional phone patches. The ability to transmit transtelephonic electrocardiograms provides an economical method of preparing for in-flight cardiovascular emergencies. With in-flight transtelephonic electrocardiographic monitoring, adequate emergency medical supplies and properly trained emergency medical personnel, cardiovascular support may stabilize a patient and allow the continuation of the flight to its scheduled destination. In addition to the saving of human life, the need for diverted landings and its associated hazards, costs and inconveniences may be avoided.*

Transtelephonic electrocardiogram transmission has been gaining popularity over the last decade. Used initially for pacemaker follow-ups,<sup>1,2</sup> its use has been extended to documenting sporadic arrhythmias as an adjunct to 24- or 48-hour Holter monitoring<sup>3,4,5</sup> and for monitoring therapy in the management of various cardiac arrhythmias.<sup>6,7,8,9</sup> It also has been used for documenting the transient ST-segment elevation of variant angina<sup>10</sup> and for the diagnosis and management of pediatric cardiac rhythm disorders.<sup>11</sup> Transtelephonic electrocardiogram transmissions can be effected whenever voice telephone transmission can be completed. This report establishes the feasibility of in-flight electrocardiogram transmission, using equipment in current clinical use via air-to-ground radio transmission. The availability of in-flight cardiac telemetry could be a valuable aid in the evaluation and management of in-flight cardiac emergencies.

## Materials and Methods

First Hawaiian Bank's newly purchased 9-passenger corporate Lear jet was used for this study during a routine flight to Kailua-Kona, about 200 miles from Honolulu. While in flight, transtelephonic electrocardiograms were sent to the base station located at The Fronk Clinic in Honolulu. The transmitter device (Cardiobeeper-HM Heart Monitor, Survival Technology, Inc.) (Fig.) modulates the electrocardiographic signal into an acoustical tone which is capable of being transmitted via telephone networks. It is slightly larger than a deck of playing cards and weighs about a half pound. The receiving base station demodulates the acoustical tone back into the electrocardiographic signal and prints it. The base station consists of a 24-hour-a-

day telephone answering system (Sanyo M-139N) and a decoder-interval counter-strip chart recorder (Cardiobeeper-Decoder, Survival Technology, Inc.).

Leads I, II, or III may be transmitted with this system. Two-way voice communication can occur interrupting or following the transmission of the electrocardiogram.

## Results

The first electrocardiogram transmission was completed while in flight, about 20 miles out of Kailua-Kona. A Sperry Rand service representative aboard for an in-flight instrument check volunteered to be the subject in a mock cardiac arrest. Standard Lead I rhythm strips were transmitted in both instances. One was transmitted at 129.5 MHz. (Megahertz), VHF and access to The Fronk Clinic Cardiobeeper Center was gained via phone patches routinely used in air-to-ground in-flight telephone transmissions, common in corporate jets. A second Lead I strip was transmitted at 652.6 MHz, UHF. Access to The Fronk Clinic Cardiobeeper Center was made without any difficulty.

## Discussion

The feasibility of air-to-ground in-flight electrocardiogram transmission was established using inexpensive current technology. Because of this, the First Hawaiian Bank elected to include a Cardiobeeper electrocardiogram transmitter as standard on-board equipment in their corporate jet, allowing instant access to The Fronk Clinic Cardiobeeper Center should cardiac-related problems occur in flight. Additionally, both pilots have been certified in cardiopulmonary resuscitation and the medical bag updated to include medications that may be required. Recommendations have been made by the Air Transport Medicine Committee of the Aerospace Medical Association (Mohler)<sup>12</sup> and by Pasquet of Air France<sup>13</sup> to include a stethoscope, sphygmomanometer and various cardio-

pharmacologic agents in aircraft emergency medical kits.

Previous reports<sup>13, 14, 15</sup> show that cardiovascular problems constitute approximately 25% of medical emergencies aboard commercial flights. The age and sex of most passengers in corporate jets increases the likelihood of cardiovascular emergencies. The use of in-flight electrocardiogram transmission may afford direction to flight personnel, especially if cardiopulmonary resuscitation is in progress. Therefore, it is highly recommended that transtelephone electrocardiogram transmitters be standard equipment aboard corporate jets.

The far-reaching implication, of course, is the use of this modality in commercial trans-Pacific or trans-Atlantic flights, where an occasional cardiac arrest may force the plane to return to the nearest airport. Even over land, the wide bodies of commercial aircraft limit the number of airports where unscheduled

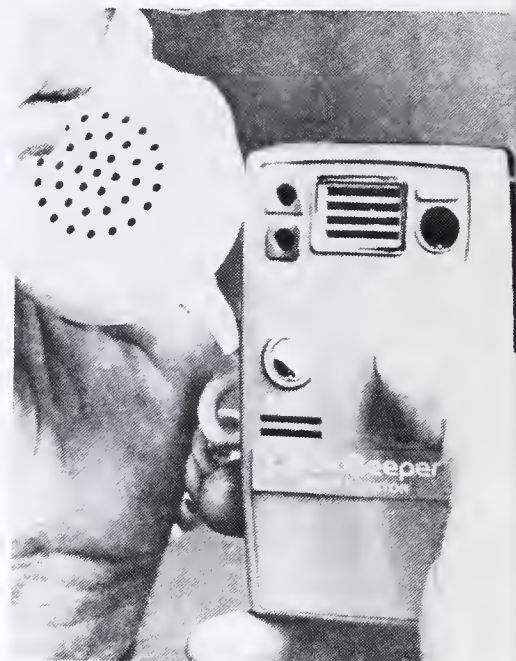


FIG.—Cardiobeeper-HM Heart Monitor, Survival Technology, Inc.

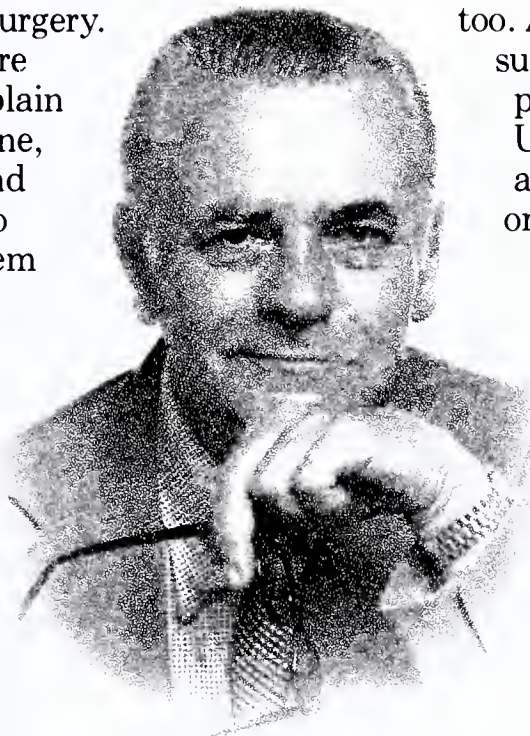
landings can be safely made, due to runway, taxiway and ramp limitations. Adverse weather conditions may also limit the accessibility of an airport. These factors add to the delay in instituting care for medical emergencies. An hour or more may be required before an unscheduled landing can be made.<sup>15</sup> In addition, diverted flights incur extreme costs in the form of wasted fuel, replacement flight personnel, passenger accommodations rebookings, and other inconveniences placed on the passengers. With transtelephonic electrocardiographic monitoring, cardiopulmonary resuscitation can be continued, especially if emergency medical service trained personnel are on board as members of the flight crew.

The goal would be to deliver adequate medical support in order that the aircraft may be allowed to continue to its scheduled destination. A recommendation is made that at least one member of the

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flight crew of every trans-Pacific or trans-Atlantic flight be an emergency medical technician. This supercedes the prior requirement of including a nurse as a member of the flight crew. Many world airlines are presently providing extensive first-aid training to their flight crews. Mohler<sup>15</sup> has recommended that training should be extended to include 2-way medical emergency communications. Base stations manned by airport or airline physicians can be made to respond to on-going emergencies in flight, in the same manner that many emergency rooms now do to emergency medical technician-manned ambulance units with telemetry. On board, equipment should include a lightweight defibrillator and a minimum of emergency supplies. The savings in life, fuel and time may warrant utilization of this modality to handle cardiac arrests, especially in long distance flights. Its use in short distance inter-island travel may be construed as overkill. However, the First Hawaiian Bank corporate jet occasionally extends its range to fly to Guam, Japan and the continental U.S.

#### ACKNOWLEDGMENTS

Sincere gratitude is extended to Captain Bert Dupont, pilot, and Jerry Henry, co-pilot, as well as to Pam Marshall, June Makalena, and Angie Gaminde of the Fronk Clinic staff, who were responsible for the completion of this project.

#### Summary

The practicality of transtelephonic electrocardiogram monitoring has become fully established as evidenced by its current widespread use in cardiac diagnosis and management. Air-to-ground in-flight transtelephonic electrocardiogram transmission was shown also to be feasible. The implications of being able to transmit in-flight electrocardiograms are widespread due to the significant number of in-flight cardiac emergencies. With in-

flight transtelephonic electrocardiographic monitoring, adequate emergency medical supplies and properly trained emergency medical personnel, cardiovascular support may stabilize a patient and allow the continuation of the flight to its scheduled destination. In addition to saving human life, the need for diverted landings and its associated hazards, costs and inconveniences could be avoided.

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#### Confluence

Three members of the Hawaii Medical Association Auxiliary attended the national leadership Confluence, sponsored by the AMA Auxiliary in Chicago in October. **Carol McNamee** represented the HMA Auxiliary, **Brenda Lumeng** attended from the Auxiliary of the Honolulu County Medical Society, and **Dorothy Newman** attended from the Kauai County Medical Society Auxiliary.

Eva Schindler-Rainman, well-known author and authority on volunteer management, conducted a seminar on recruiting and retaining members, and a second workshop on public relations. In addition, leadership skill seminars were offered in time management, legislation, parliamentary procedure, working with other organizations, and working with your medical society. The speaker for the

latter topic, executive secretary of the state Medical Society of Wisconsin, stated the importance for a medical society or association to understand the value of its auxiliary and to give the support needed to function effectively: appropriate space; staff; and an adequate budget.

The final day of the Confluence was devoted to topic seminars, providing information and stimulation about possible project areas. Programs for the prevention of drug abuse and child abuse were discussed; many auxiliaries have become involved in community coalitions to prevent drug abuse through education and through the formation of parent support groups. The HMA Auxiliary may become involved in such a coalition locally.

Another seminar was concerned with mid-life problems in the medical family. Physicians' families have a 50% higher rate of marriage distress than the average family. For a physician, the constant position of authority leads to unrealistic feelings of superiority. Auxiliaries were urged to be a part of "impaired physician" committees within their medical societies, to form a supporting network for the families of physicians experiencing marital distress.

The Hawaii representatives realized there is much to be done—within our own membership and in our community. We, as the arm of organized medicine, have great potential power. All we need is

womanpower, and to this end our membership committee will be working diligently during the coming year.

#### Facets

The 1981 Honolulu County Auxiliary's Guest Day seminar, "Cross-Cultural Caring," is the cover story in the January issue of "Facets" magazine, the quarterly publication sent to all members of the AMA Auxiliary across the country. We are honored that Honolulu's seminar is receiving national attention.

#### New and old officers

At their combined mini-convention held at the Hilton Hawaiian Village December 2, the HMA Auxiliary and the Auxiliary to the HCMS installed officers for the 1983 year. Although a convention had been held in May 1982, a change in the administrative year of both organizations necessitated another "annual session" to formally install those carrying on through December 1983. **Lila Johnson** acted as installing officer for the ceremony at which the following members took office:

#### HMA Auxiliary:

President . . . **Carol McNamee** (Philip)  
Vice Presidents . . . **Ella Edwards** (John)  
(Honolulu)

**Sue Irvine** (Robert) (Hawaii)  
**Betsy Haines** (Glenn) (Maui)  
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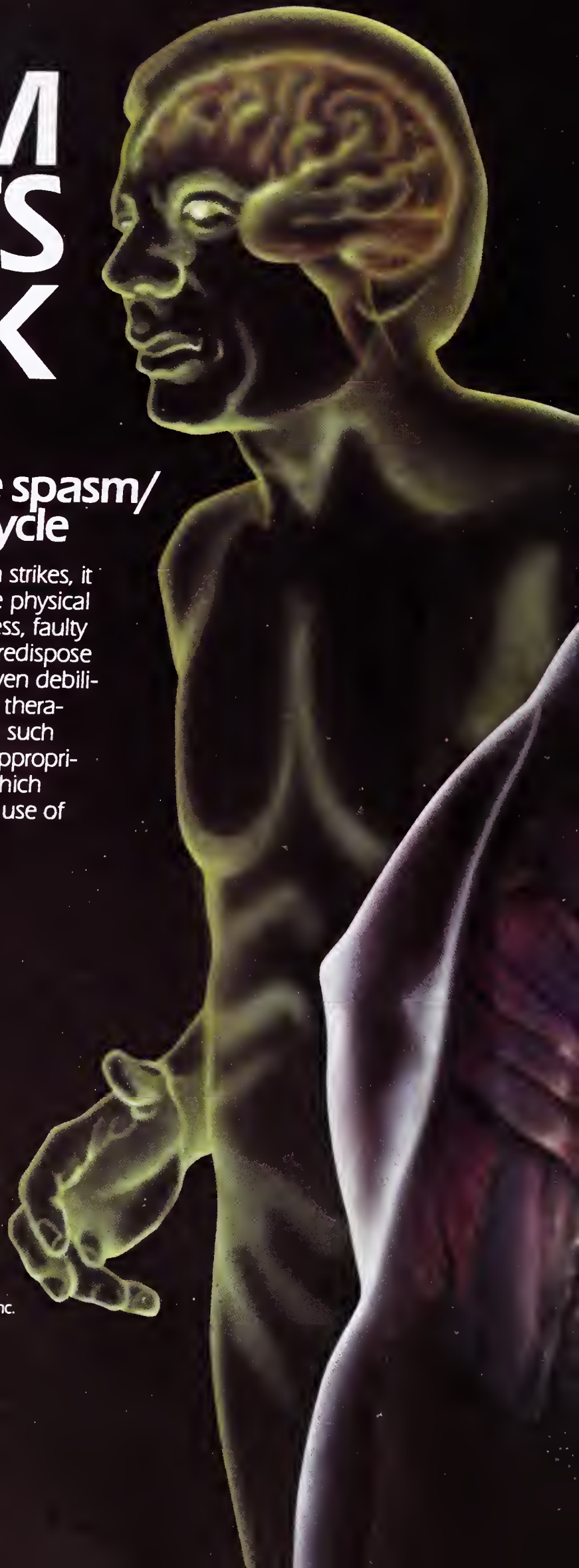


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The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

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## President's Message

The hope of your president is to continue to communicate with you about the issues facing medicine in Hawaii, and with our state legislature, now in session. I want to let you know what your Association sees as issues and how we currently feel about these issues. I also hope that you will let me know what your concerns are on these as well as other matters that will surface at the legislative session.

Malpractice law reform is still on our agenda this year, with HMA seeking legislation that will mandate periodic payments for judgments and will allow collateral sources of funds to be considered. The changes we are seeking will greatly help to stabilize the cost of malpractice insurance to physicians, and, in turn, help to keep medical care costs down.

We are seeking to allow osteopaths eligibility to participate in the patients' compensation fund (PCF), as well as to use medical claims conciliation panels. We believe that our colleagues should have these opportunities open to them.

We will be seeking legislation to control the proliferation of look-alike drugs, as well as to have a drug-identification law which requires all drugs to be properly marked.

We support amendments to current law that would raise the legal drinking age from 18 to 21 and provide for stiffer penalties under current drunk driving statutes.

Other concerns relate to costs for medical care in our community, including appropriate peer review under our Medicaid program, appropriate use of state funds under the block grant program, and inappropriate mandating of health insurance coverage for other providers of care.

We are certain that other issues will arise during the legislative session. Your Association will seek to represent you and medicine in Hawaii on these issues, and we do need your support, your input, and your assistance. Your help also will be greatly appreciated through your support of HAMPAC, the political action arm of medicine in Hawaii. If medicine is to be heard in the great legislative clamor, we need your help!

Calvin C.M. Kam, M.D.  
President

Hawaii Medical Association

### Continuing Medical Education

#### CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

(Accredited programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks.")

#### LOCAL ACCREDITED PROGRAMS ONGOING

For a complete list of ongoing programs, please refer to the October 1982 issue of the HAWAII MEDICAL JOURNAL. Further information regarding ongoing events is available through the individual institutions or through the HMA's CME Department.

#### SPECIAL EVENTS

Feb. 19 & 20, 1983	Physical Examination of the Spine and Extremities, 12 hrs., Category I, Kapiolani Community College, 620 Pensacola. Contact: James Palmer at (808) 521-8140, February 19, 8 a.m.-5 p.m.; February 20, 8 a.m.-2:30 p.m.
March 14-18, 1983	Allergy and Dermatology. Contact: Symposium Maui, Inc., P.O. Box 10185, Lahaina, Maui, Hawaii, 96761. At: Royal Lahaina Resort, Kaanapali Beach, Maui, Hawaii. Hr. for hr. to 22 hrs.
March 14-18, 1983	University of Hawaii Sports Med. Course, 18 hrs., Category I. At: Princess Kaiulani Hotel, Waikiki. Contact: Joy Lewis, Box CE-CCES, 2530 Dole St., Honolulu, Hawaii 96822, (808) 948-8244.

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# Prostate Cancer: the Paradox of Early Diagnosis

Albert J. Mariani, M.D.; Carol Tom, R.N.; Anandom Hariharan, M.D.; and Ulrich K. Stams, M.D., Honolulu

• *The Kaiser Medical Center of Hawaii (KMCH) Prostatic Cancer experience of 200 patients is presented. A total of 83% of the patients was diagnosed while the disease was localized. This compares favorably with classic studies in which the disease was diagnosed while localized in only 60-70% of cases. In its early stages, prostatic carcinoma is asymptomatic and can only be diagnosed by routine rectal examinations. The early diagnosis of prostate carcinoma at this institution is attributed to the multiphasic examination of healthy patients and easily accessible medical care in which routine rectal examination is performed.*

*While this is a higher rate than reported elsewhere of early diagnosis of prostate carcinoma, the Kaiser patient survival is only slightly higher than published figures (59% versus 56% 5-year survival). This is attributed to the biologic predetermined behavior of most stages and grades of prostatic carcinoma. It is in stage B1 well-differentiated prostate cancers that therapeutic intervention has the most to offer and where multiphasic examination and routine rectal examinations are most effective. Thus, while early detection may have little impact upon overall survival—on those few individuals for whom curative therapy can be offered—the early detection of prostate cancer may be lifesaving.*

Of an estimated 56,000 new cases diagnosed each year, 19,000 American men die of prostate cancer. Thus, prostate cancer is the third most common cause of cancer death in men after lung and colorectal cancer.

In Hawaii, an estimated 125 cases would be diagnosed and an estimated 40 patients would die of prostate cancer in 1982.<sup>1</sup> The incidence of the disease is highest in Caucasians (Europeans), intermediate in Japanese, Chinese, and Hawaiians, and lowest in Filipinos. In recent years, the greatest increase in incidence has been noted among Chinese and Japanese. Tumor Registry of Hawaii statistics suggest that the median age of patients with prostate cancer is lowest among Hawaiians and Filipinos, intermediate for Caucasians and Chinese, and highest for persons of Japanese descent.<sup>2</sup>

## Study

Between 1959 and 1982, 200 cases of prostate cancer were diagnosed at the Kaiser Medical Center in Honolulu. Of these, 93 were diagnosed before 1976, allowing for a 5-year follow-up. Diagnosis was made by either transperineal or transrectal needle biopsy of the prostate or after examination of the pathological specimen after transurethral resection of the prostate. The clinical staging evaluation included a bone scan and/or lumbar spine and pelvis X-rays, chest X-ray, CBC, prostatic acid phosphatase, and alkaline phosphatase. Other laboratory tests were obtained as indicated. All pathologic specimens were graded as well-differentiated (grade 1), moderately well-differentiated (grade 2), or poorly differentiated (grade 3). When the tumor was noted to have well-differentiated as well as less-differentiated elements, the highest grade was assigned.

which could only be detected by the digital rectal examination. The digital rectal examination remains the best test for prostate cancer.<sup>7</sup>

Of interest was the high incidence of bladder outlet obstruction in prostate cancer patients.

Even in stage D, a metastatic presentation occurred in only half the patients. Symptoms of bladder outlet obstruction, especially if of short duration, should be regarded with a high index of suspicion for prostate cancer.

## Survival by Clinical Stage at Diagnosis

The 5-year survival of patients with stage A1 and B prostate cancer approximates the survival of patients in this age group without prostate cancer. (Table 2).<sup>9</sup>

The 5-year survival of patients with stage A2 and C disease is poor, and the 5-year survival of stage D patients is even worse, as expected (33%) (Table 2); but even these figures are somewhat better than those quoted in the literature (10-15%).<sup>3, 4, 5, 6</sup> This may represent an artifact of early detection, as most of these patients had minimal metastatic disease at the time of diagnosis. Of the 6 patients who survived 5 years, 4 died of prostate cancer or had progressive disease at the end point of the study, i.e. beyond 5 years. This illustrates that a 5-year follow-up is not as useful as an index of therapeutic success for prostate cancer as for some other cancers, because of the slow growth of this neoplasm.

Survival is correlated with the degree of differentiation of the tumor. Only one patient in the entire series died of prostate cancer with a well-differentiated tumor (grade 1). The original diagnosis was made by transperineal needle biopsy of the prostate; however, this patient was shortly thereafter demonstrated to have poorly differentiated tumor in a metastatic supraclavicular lymph node by node biopsy. This reflects the heterogeneity of differentiation in prostate cancers. Of 10 patients who were biopsied for metastatic

## Results

### Stage at diagnosis (200 patients)

- A1: 17% incidental, focal tumor
- A2: 12% incidental, multifocal tumor
- B: 34% tumor localized to the prostate
- C: 20% regional metastases
- D: 17% distant metastases

It is of interest that the largest group was the stage B prostate cancer patients (34%), while the smallest group was the stage D patients (17%). This finding differs from the reports of the classic papers in which stage B patients made up 2%,<sup>3</sup> 7%,<sup>4</sup> 12%,<sup>5</sup> and 29%<sup>6</sup> of the total prostate cancer population, while the stage D patients made up 64%,<sup>3</sup> 40%,<sup>5</sup> and 26%<sup>6</sup> of the total prostate cancer population.

### Clinical Presentation

These findings (Table 1) underscore an important point. Almost four-fifths of the potentially curable prostate cancer patients (stage B) were asymptomatic at presentation except for a prostate nodule

TABLE 1  
Clinical Presentation (142 patients)

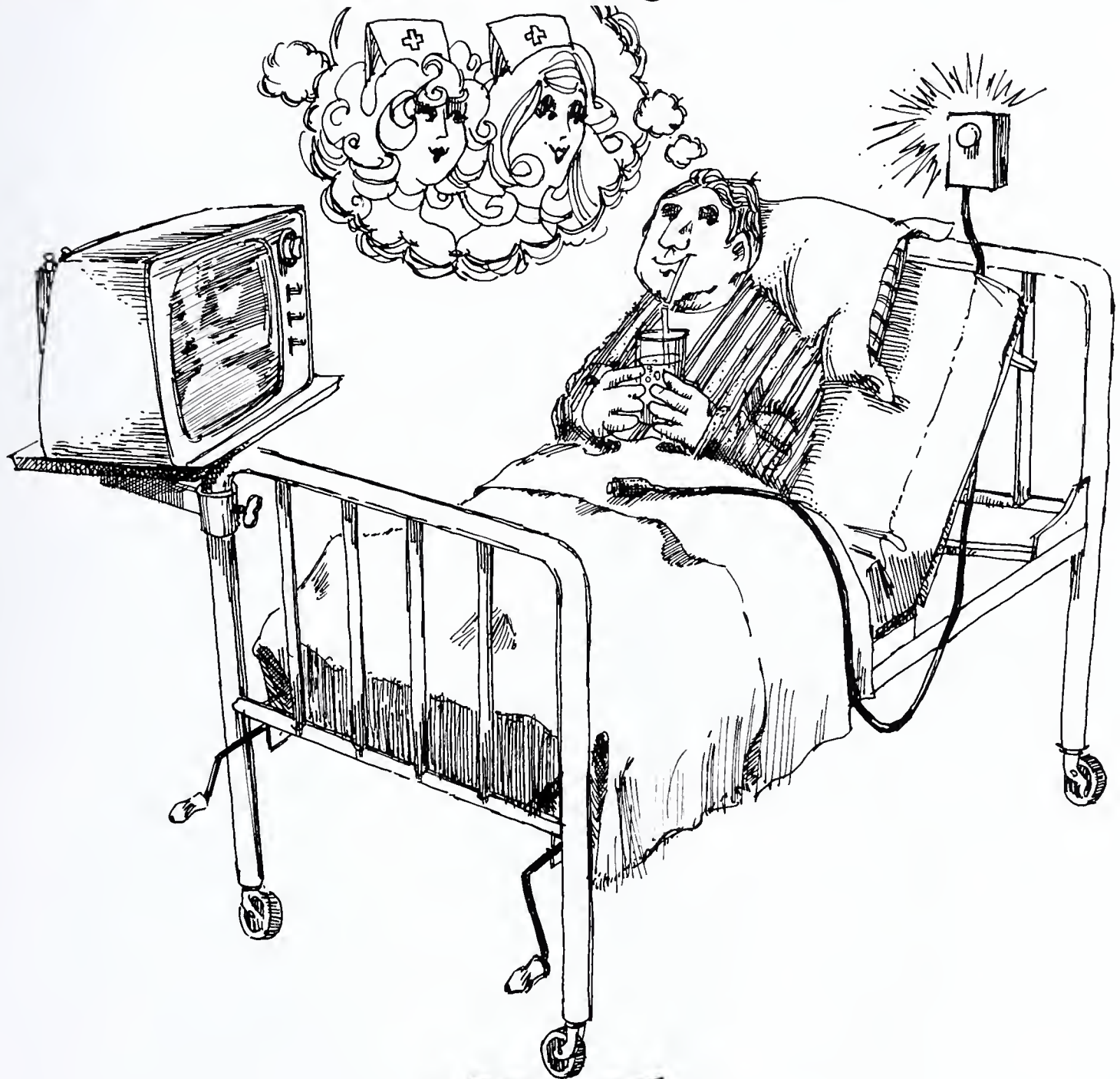
Stage	Asymptomatic	Obstructive Symptoms	Metastatic Symptoms
B	78% (20% MPE)	22%	0%
C	48% (11% MPE)	52%	0%
D	3%	47%	50%

MPE = Multiphasic Examination of Asymptomatic Patients

TABLE 2  
Survival by Clinical Stage at Diagnosis (90 patients)

Stage	Five-year Survival	Number of Patients
A1	73%	11
A2	50%	10
B	73%	29
C	52%	22
D	33%	18

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lesions, nine patients had more poorly differentiated tissue from the metastatic lesion than from the biopsy material removed from the prostatic primary tumor.

Notice in Table 4 the clustering of well-differentiated tumors in the "benign" stages A1 and B, while the less well-differentiated and anaplastic tumors are clustered in the "malignant" stages of A2, C and D.

The numbers of 5-year survivors (Table 5) are too small to draw meaningful conclusions; therefore, raw data is presented. Other studies suggest that the biologic behavior of a given stage and grade is more important than the therapeutic intervention.<sup>4</sup>

### Summary of Results

1—State A1 and B prostate cancer patients have good survival.

2—Stage A2, C and D prostate cancer patients have poor survival.

3—Well-differentiated tumors are more commonly associated with good prognosis stage A1 and B tumors while less well-differentiated tumors are more commonly associated with poor prognosis stage A2, C and D tumors.

4—Prostate tumors possess heterogeneous cellular differentiation patterns. Poorly differentiated elements will tend to metastasize.

### Discussion

The 5-year survival of the Kaiser prostate cancer patients was 59%. This was only slightly higher than the 56% 5-year survival reported in the most recent large-scale studies (10,293 patients), carried out by the American College of Surgeons and was contributed to by KMCH.<sup>6</sup> Only a small difference in survival was seen despite the earlier stage at diagnosis at KMCH. To understand this dilemma, the biological behavior of each stage of prostate cancer must be examined.

Stage A1: Of the 90 patients followed for 5 years, 11 had stage A1 prostate cancer. Stage A1 prostate cancer is an occult, focal, usually low-grade cancer, diagnosed from the chips submitted to the pathologist for microscopic examination after a transurethral resection of the prostate or from the prostatic adenoma after an open prostatectomy. Stage A1 is usually of no clinical significance and warrants observation.<sup>8</sup> Pelvic node involvement in patients with stage A1 prostate cancer is unusual.

None of the 11 patients died of prostate cancer, nor did any of them have clinical evidence of progression of prostate cancer. Of the 3 patients who died, the cause was unrelated to the prostate cancer. The overall 5-year survival was 73%.

Stage A2: Of the prostate cancer patients followed for 5 years, 10 had stage A2 disease. Again, this is an occult cancer diagnosed after prostate surgery by the pathologist. Its behavior is very different from stage A1 prostate cancer. It is multi-

TABLE 3 Survival by Grade at Diagnosis (93 patients)			
Grade	Death from Prostate Cancer	Death from Other Cause	Alive
1	3%	24%	73%
2	45%	12%	43%
3	50%	10%	40%

TABLE 4 Grade by Stage (200 patients)			
Stage	Well-Differentiated	Moderately Well-Differentiated	Anaplastic
A1	36%	1%	2%
A2	9%	11%	15%
B	44%	35%	12%
C	9%	28%	34%
D	2%	25%	39%

TABLE 5 Survival by Treatment at Five Years (60 patients)				
Stage	Observation*	Hormonal*	Radiotherapy*	Radical Surgery*
A2	2/0/1	1/1/3	0/0/1	1/0/0
B	1/1/2	1/3/8	1/1/6	0/0/5
C	2/0/0	7/3/5	0/0/3	1/0/1
Patient Total	9	31	12	8

\* Death from prostate cancer/death from other cause/alive

TABLE 6 Ethnic Differences (88 patients)								
Ethnicity	Number of Patients			Age at Diagnosis			Five-year Survival	
Caucasian	53			67.7 years			52%	
Oriental	26			71.2 years			62%	
Filipino	9			67.3 years			45%	
Ethnicity	Gr. 1	Gr. 2	Gr. 3	A1	A2	B	C	D
Caucasian	45%	42%	13%	20%	9%	32%	21%	15%
Oriental	33%	25%	42%	13%	9%	32%	21%	25%
Filipino	19%	37%	21%	0%	23%	33%	19%	25%

\* The numbers are too small to draw meaningful conclusions; therefore, the raw data is presented.

focal and more commonly poorly differentiated. The prognosis is considerably worse than stage A1 or B prostate cancer. Its biological behavior is more similar to stage C prostate cancer. Of stage A2 prostate cancer patients who are clinically staged, 22-37% would be expected to have pelvic node metastases on surgical staging.<sup>10</sup>

Stage B: More than a third (67) of the patients in this series had clinical stage B disease. This is the earliest stage at which prostate cancer can be clinically diagnosed, and is the only stage of prostate cancer in which treatment, either definitive radiotherapy or radical prostatectomy, has much influence upon survival.

Stage B prostate cancer is disease localized to the prostate. It presents as a hard or indurated prostate nodule, diagnosed by digital rectal examination and confirmed by follow-up biopsy of the prostate. Of the stage B prostate cancers in this study, 78% were asymptomatic. Of the patients who were symptomatic with

mild to moderate degrees of prostatism, none had symptoms specifically suggestive of prostate cancer. This is the stage of the disease where the screening of healthy patients is most useful. A total of 20% of the stage B prostate cancer patients were detected at routine physical examination as a part of multiphasic screening of healthy patients. The remainder were detected by physicians performing routine rectal examinations.

Stage B prostate cancer patients do well. Patients with clinically staged prostate cancer would be expected to have 17-29% pelvic lymph node involvement if surgically staged. Of the 29 patients followed for 5 years or more, there was a 73% 5-year survival. Of the 8 patients who died, only 3 died of prostate cancer. All 3 of these patients had had a nodule which involved more than one lobe of the prostate. More than half of such patients, if surgically staged, would become stage C or D on the basis of local extension or lymph node involvement.

Stage C: Stage C prostate cancer is lo-

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cally metastatic disease. In such patients, the cancer has spread to the bladder, seminal vesicles, or periprostatic tissues. About 46% of such patients would be expected to have pelvic lymph node metastases if surgically staged.<sup>11</sup>

Almost half the stage C patients were asymptomatic and were diagnosed on routine rectal examination. The remainder had symptoms of urinary obstruction. Again, as in stage B patients, the patients with prostatism did not have symptoms specifically referable to prostate cancer.

Patients with stage C prostate cancer do poorly. Of the 22 patients who were followed for 5 years, only half survived. Of 11 patients, 9 died of prostate cancer while 2 died of unrelated causes. Of the 11 survivors at 5 years, 2 had evidence of progression of the disease.

Stage D: Stage D prostate cancer is metastatic disease. Metastases are usually to bone and are osteoblastic radiographically. At presentation, a surprising 11% of the patients in this series were asymptomatic. Fully 47% had evidence of bladder outlet obstruction, and 41% had symptoms which reflected metastatic prostate cancer, such as bone pain, anemia, and cachexia.

Patients with stage D prostate cancer also do poorly. Two thirds of the patients followed for 5 years were dead. Of these 12 all but 2 died of metastatic prostate cancer. All 6 of the remaining survivors had evidence of disease, and 2 had evidence of progression. An additional 2 patients died of prostate cancer at 6 and 8 years after diagnosis.

This illustrates the need for a long follow-up of prostate cancer. Our 33% 5-year survival is considerably higher than that reported in the literature. Other studies suggest a 5-year survival of 10-20%.<sup>3,4,6</sup> The difference is more likely due to earlier diagnosis than to increased survival. Most of the stage D patients in this series presented with minimal metastatic disease at the outset and progressed to death from metastatic prostate cancer.

To summarize the biologic behavior of prostate cancer: stage A1 cancer is usually well-differentiated and non-aggressive. Such patients live a normal lifespan and

rarely die of prostate cancer. Stages A2, C and D are usually high grade and aggressive. If given a long enough follow-up, these patients usually die of prostate cancer or with progressive disease present.

Stage B prostate cancer is usually slow growing but progressive. Little data is available on the natural history of stage B prostate cancer which is untreated, but those data suggest that survival can be improved with treatment.<sup>12</sup> Since the cancer is localized, by definition, it is subject to ablative treatment consisting of radical surgery or radiotherapy, depending upon the age and condition of the patient. Given the correct staging and treatment, the survival of stage B prostate cancer patients can approach 80-90%, when age-adjusted. This is to be contrasted with an expected 20% 5-year survival without treatment.<sup>12</sup>

With current therapeutic modalities, the only way to increase prostate cancer survivals is to diagnose a greater percentage of patients while the disease is localized. This may represent a relatively small percentage of the total prostate cancer population. The long-term survival of those patients who have incidental prostate cancer (A1) or anaplastic aggressive cancer which may be widespread almost at its inception, is probably not influenced by current therapeutic modalities. The only way to make an impact on long-term survival is to increase the percentage of victims discovered with localized cancer. This can be done with the routine rectal examination in patients at risk, i.e.

men over 50 years of age.

Considering prostate cancer survival statistics by symptoms rather than stage, prostate cancer is usually not symptomatic until it is metastatic. Before that, initial diagnosis can only be made by digital rectal examination. At KMCH, the 5-year survival of asymptomatic patients with prostate cancer was 77%. The 5-year survival of symptomatic patients was 36%. Between 1948 and 1969, the Cancer Detection Center at the University of Minnesota performed 28,000 digital rectal examinations on more than 5,000 asymptomatic men. A total of 75 prostate cancers were detected. The 5-year survival of this group was 77%, at a time when the 5-year survival of prostate cancer was 45%. The obvious explanation is that asymptomatic patients are more likely to have early stage prostate cancer which either has a benign natural history (A1) or can be cured (B).

This brings us to the dilemma. While there is a higher rate of early diagnosis at KMCH, overall survival figures are only slightly higher than modern published figures (59 vs. 56% 5-year survival). Evidence suggests that only in stage B prostate cancer can therapeutic intervention effectively prolong life. Fortunately, this is the stage where routine rectal examination is most effective. Thus, while there may be little effect upon overall survival by early detection of prostate cancer, on those relatively few cases in which cure may be offered—namely stage B patients—the early detection of prostate cancer may be lifesaving.

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#### Book Review

Ed: Douglas G. Massey, M.D.

Nutrition and Heart Disease. By Herbert K. Naito, Editor. 356 pp. Spectrum Publications, Inc., Jamaica, New York, 1982.

This book is the product of a symposium related to the Proceedings of the 19th Annual Meeting of the American College of Nutrition held June 1-2, 1978. There are 23 chapters, most of which are based on papers presented at the meeting and edited for publication. Bibliographic references are comprehensive. This book cannot be considered as a reference text, however. Some chapters include good reviews of concepts relating to pathogenesis

of atheroma, nutritional considerations in prevention and management of lipid disorders, and details of a practical dietary approach to treatment.

The unique feature is a relatively extensive consideration of trace minerals. The discussion of EKG changes associated with magnesium abnormalities contains more detailed information than usually found in most texts. The potential role of magnesium deficiency in genesis of cardiac dysrhythmias is well covered.

James A. Orbison, M.D.

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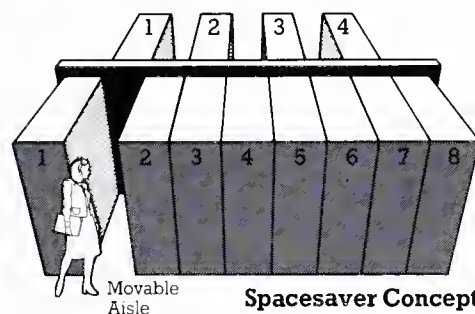
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# Clinical Usefulness of the First Heart Sound (with a New Diagnostic Finding)

Richard Reeve, M.D., and F. Joan Sakai, M.D., Honolulu

There are 2 main components of the first heart sound: The primary is from vibrations associated with tension on the mitral valve as it closes,<sup>1,2</sup> and the second component comes about 0.03 seconds later as the tricuspid valve closes.<sup>2,3,4</sup> The most important cardiac factor influencing the intensity of the first heart sound, if the valves move, is the position of the mitral and tricuspid valves at the onset of ventricular systole. The wider the opening of the valve, the louder is the first sound from that valve.<sup>5,6</sup> Valves will be wide open and the first sound loud when the PR interval is short, when diastole is short from tachycardia, when flow is increased, or when flow is prolonged from A-V valve stenosis.

A soft or absent first sound is found in a fixed, immobile valve; or in a mobile A-V valve closed at the time of ventricular systole, found either associated with a long PR interval (greater than or equal to 0.18 seconds),<sup>7</sup> or from a valve closed by hemodynamic factors (such as an absent first sound in the mitral area in the presence of severe aortic insufficiency).<sup>8</sup>

Previous findings of the value of the first sound in diagnosis have included the following:

## 1—Complete heart block

There is varying intensity of the first sound associated with varying PR intervals in complete heart block.

## 2—Ventricular tachycardia

When AV dissociation occurs, a varying first sound is found.

## 3—Atrial fibrillation

A varying first sound is found with the intensity inversely related to the preceding cycle length.

## 4—Mitral stenosis and atrial fibrillation

A loud first sound is found with severe mitral stenosis in a mobile valve even with long preceding cycle length.

## 5—Epstein's disease

A loud, late tricuspid closure sound is present.

## 6—Atrial septal defect

A loud tricuspid closure sound is noted.

## New Diagnostic Finding

Complete closure of the mitral valve with PR interval greater than or equal to 0.18 seconds is associated with a reverse pressure gradient after atrial activity between the left ventricle and left atrium.<sup>7</sup> This reverse gradient may fail to develop and the mitral valve may not close before ventricular systole in the following situations: (1) with increased blood flow, (2) with increased positive pressure gradient such as mitral stenosis, (3) with weak atrial activity, or (4) with increased atrial pressure such as in heart failure. These are the known conditions that may lead to an open AV valve when the PR interval is greater than or equal to 0.18 seconds. The clinical correlate of this echo finding is that, even with a PR greater than or equal to 0.18 seconds, the first sound may be well heard, since complete closure does not occur before ventricular systole. The first two conditions have been previously recognized. The third is rare. The fourth cause has not been previously reported. With increased atrial pressure, such as in heart failure and with a high left ventricular end diastolic pressure, the mitral first sound may be louder than the tricuspid first sound. The diagnostic usefulness is illustrated in the following cases.

**Case 1.** A 75-year-old lady presented with a history of fatigue and shortness of breath. Blood pressure 110/60. Jugular venous pressure normal. Rales present at both bases. Her heart was moderately enlarged and not particularly active. The first sound was very prominent in the mitral area and soft in the tricuspid area. An apical high-pitched systolic murmur and an apical medium-pitched diastolic murmur were noted. Her EKG showed a

PR interval of 0.20 seconds. Mitral stenosis and mitral insufficiency were considered likely diagnoses. Cardiac catheterization done later at Mayo Clinic documented mitral regurgitation, poor left ventricular function, but no evidence of mitral stenosis. An echo done later was consistent with aortic insufficiency being the cause of her diastolic murmur. At catheterization, left ventricular end diastolic pressure was 30. On her echocardiogram, a B bump was present on the mitral valve echo.<sup>9,10</sup> With the prominent diastolic murmur and the loud first sound in the presence of a PR interval of 0.20 seconds, a diagnosis of mitral stenosis was considered. Recognition that the mitral valve may not close before systole, when there is increased atrial pressure and increased left ventricular end diastolic pressure in the presence of a PR interval greater than 0.18 seconds, would have suggested high left ventricular filling pressure as another diagnostic possibility.

**Case 2.** A 69-year-old patient with congestive cardiomyopathy secondary to previous myocardial infarctions had a PR interval of 0.18 seconds. He had a louder first sound in the mitral area than in the tricuspid area. Echocardiogram showed a B bump present on his mitral valve. Wedge pressure was 30 at the time of Swan-Ganz catheterization. In patients with a PR greater or equal to 0.18 seconds, a mitral first sound louder than tricuspid first sound may suggest the presence of high left ventricular end diastolic pressure.

## Conclusions

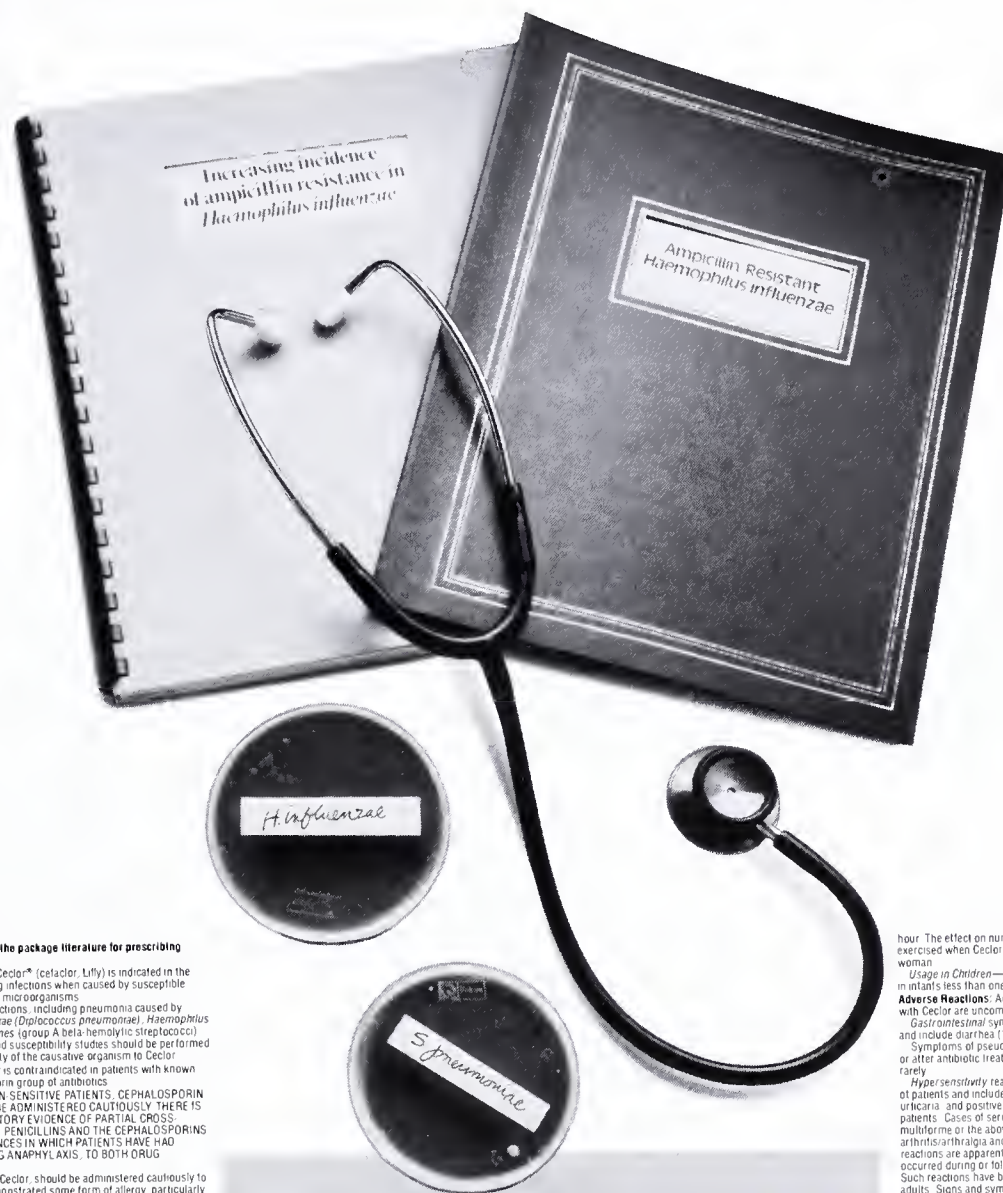
Recent studies have added to our knowledge of the physiology of the first sound. In those patients with a PR greater or equal to 0.18 seconds, expected to have a soft apical first sound, the finding of a louder first sound in the mitral than in the tricuspid area may suggest elevated left ventricular end diastolic pressure and may be of clinical usefulness and interest.

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**Indications and Usage** Cefclor® (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (Diplococcus pneumoniae), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococcus). Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

**Contraindication:** Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics. **Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions:** **General Precautions:** If an allergic reaction to Cefclor occurs, the drug should be discontinued, and if necessary the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinitest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy—Pregnancy Category B—**Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers—**Small amounts of Cefclor have been detected in mother's milk following administration of single 500 mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

hour. The effect on nursing infants is not known. Caution should be exercised when Cefclor® (cefaclor, Lilly) is administered to a nursing woman.

**Usage in Children—**Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions:** Adverse effects considered related to therapy with Cefclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70). Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthralgia/arthritis and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor.

Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy.

No serious sequelae have been reported. Anaphylaxis and corticosteroids appear to enhance resolution of the syndrome. Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain—**Transient abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic—**Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematologic—**Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal—**Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

(061782R)

## Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefclor.<sup>1-6</sup>

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.<sup>7</sup>

# Cefclor®

## cefaclor

Pulvules®, 250 and 500 mg

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

### References:

1. Antimicrob. Agents Chemother. 8:91, 1975.
2. Antimicrob. Agents Chemother. 11:470, 1977.
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4. Antimicrob. Agents Chemother. 12:490, 1977.
5. Current Chemotherapy (edited by W. Siegenthaler and R. Luthy), 11:580. Washington, D.C.: American Society for Microbiology, 1978.
6. Antimicrob. Agents Chemother. 13:861, 1978.
7. Data on file, Eli Lilly and Company.
8. Principles and Practice of Infectious Diseases (edited by G. L. Mandell, R. G. Douglas, Jr., and J. E. Bennett), p. 487. New York: John Wiley & Sons, 1979.

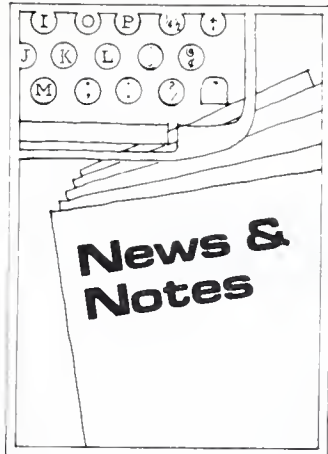
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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285. Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630.

300035





Henry Yokoyama, M.D.

## Professional Moves

We again apologize for the belated news, but then, better late than never . . . We reach back to August and September of last year . . . Internist **Patriet Lam** (son of our late friend, **Dick Lam**) has joined **David Eith** and the Industrial Medical Clinic (which Dick had started) at 1523 Kalakaua Ave., Suite 101 . . . **Roland Ng**, nephrologist-internist opened his office at Professional Plaza of the Pacific, Suite 304; internist **Kenneth Robert Hughes** joined **Birendiza Huja** at Queen Emma Bldg., Suite 409; internist **Chiyoume Leinala Fukino** joined The Fronk Clinic; internist **Bryan Matsumoto** joined **Joe Nishimoto's** Pearl City Medical Association, Inc., at 880 Kam Hwy.; psychiatrist **Kerry Monick** relocated to Century Square, Suite 1701; and internist **Glenn Rediger** opened his office at the Hawaiian Regent Hotel, 2552 Kalakaua Ave.

In September, **Paul Tamura** and **Arturo Salcedo** announced that the Pathologists Med and Cyto Lab had opened an additional office at the Waipahu Professional Center; **F. Joan Sakai**, internist-cardiologist, joined **Richard Reeve** at the King-McKinley Bldg., Suite 312; and FP **Marcel J. Prevost** joined **Edmund Ing** at 1531 S. Beretania, Suite 305. On the Big Island, the Hilo Medical Group, Inc., announced the opening of the Pahoehoe Family Health Center with FP **Craig Kadooka** and internist **Daniel Belcher** . . .

Now on into October . . . The Kuakini Radiology Group, Inc., at KMC announced the association of radiologist **Paul R. Garver** with a subspecialty in nuclear med; internist **Cyril Goshima** opened his office at the Kaimuki Shopping Center, Suite 382; and pediatrician **Teddy Co** opened in Suite 230 . . . Orthoped **Stephen Naruto** opened his office at Aiea Medical Building, Suite 210, and another orthoped, **Gary Douglas**, relocated to Orthopedic Associates of Hawaii, Inc., at 1380 Lusitana, Suite 608. Psychiatrist **Doris Fergusson** joined The King Kalakaua Center for Humanistic Psychology, Ltd., and plastic surgeon **Maxwell Cooper** announced evening office hours by appointment at the Queen's POB . . . Urologist **Shigeo Yamamoto** announced his retirement from active practice with his successor **Tom Ito** taking over . . . In West Hawaii, **Marvin Royce** opened his

office at the Hawaiian Ocean View Estates . . .

Yet another batch from November . . . ENT man **R. Bruce Joseph** relocated to Kapiolani Children's Medical Center at 1319 Punahou St., Suite 1120 . . . OB man **Nihal De Silva** relocated to the Aiea Medical Building, Suite 502 . . . OB man **Sam Buist** of 407 Uluniu St., Kailua retired and his successor is **Montgomery Johns** . . . Psychiatrist **Valerie Brandon** joined Psychiatric and Psychological Affiliates at the American Security Bank Building, Suite 722; internist-pulmonologist **Winifred Pack** relocated to 1415 Kalakaua Ave., Room 207; and psychiatrist **Douglas Cooper** of Makawao, Maui, has opened an Oahu office at 750 Amana St., Suite 209. On the Big Island, pediatrician **Peter Locatelli** relocated to the Kuakini Professional Plaza (in West Hawaii).

Pediatrician (and our skin diving partner) **William Moore Jr.**, announced that he was changing location "for the last time" to 4747 Kilauea Ave., Suite 202 (across the street from Kahala Mall's Joseph Magnin)" [Ed. Note: Joseph Magnin's has since gone out of business!]

So here we are finally in December . . . Gastroenterologist **Ronald J. Pang** joined the Fronk Clinic . . . Yet another gastroenterologist and another Pang, **Glenn M.L. Pang**, opened his second office at St. Francis Medical Office Bldg., Suite 206 . . . General surgeon **Milton W. Kim** opened at Suite 904, 1319 Punahou Street; GP **Fumiyo Sugimoto** opened at Aiea Medical Building, Suite 502; and the Kukui Plaza Medical Associates (**Rowlin Lichter**, **Jack Scaff Jr.**, and **Bernard K. Chun**) announced that they were "a complete medical facility dealing with sports medicine, diving, and aerospace medicine and runners' problems) . . . On Maui, internist **Paul R. Ryan** (2nd Maui Finisher, "Run to the Sun, 1982"; author of **Hawaii: A Running Guide**) announced the opening of his temporary office at 55 Makawao Ave., Pukalani . . . Paul will limit his practice to internal medicine, geriatrics, and sports medicine . . .

## Elected, Appointed & Honored

**Albert C.K. Chun-Hoon** was named Hawaii Physician of the Year . . . Al was honored for his work with the Aloha United Way, HMSA, Blood Bank of Hawaii and the Hawaii Medical Library . . . Al is also chairman of the state Board of Medical Examiners and helped establish the state's medical claims conciliation panel system . . .

On the academic front: City Medical Examiner **Charles B. Odom** was presented the certificate of accreditation from the National Association of Medical Examiners. The Honolulu city Department of Medical Examiner is one of only 25 such departments to be recognized nationwide . . . **John F. McDermott**, chairman of the John A. Burns School of Medicine

department of psychiatry, has been elected to an 8-year term on the 18-member American Board of Psychiatry and Neurology . . . **Richard D. Wasnick** has been elected to fellowship in the American College of Physicians . . . **Reuben Guerrero** of Straub was elected to the American College of Physicians . . . **Ben Azman** of Kaanapali was recertified as a diplomate of the American Board of Family Practice . . .

On the political front: urologist **Thomas Ito** was elected chairman of the City Zoning Board of Appeals . . . **Thomas Cahill** and **George Goto** were appointed to the Board of Medical Examiners . . .

The Hawaii Medical Library elected **John Hardman**, president; **Ann Catts**, first VP; **R.H. Wilkinson**, second VP; **Charles Judd Jr.**, secretary, and **Grant Stemmerman** to the board . . . The Kuakini Medical Center elected **Roy Iritani**, **Clarence Sugihara**, and **Melvin Kaneshiro** as board members.

Political appointees from Maui include the following: Statewide Health Coordinating Council: **Kenneth A. Haling**; Maui County Subarea Health Planning Council: **Bert Ken Akitake**; Board of Medical Examiners: **Ben K. Azman** . . .

**Richard Sakimoto** recently received the U of H Alumni Association's 50 Years of Service to Humanity Award . . . **John William Holmes** received this year's Distinguished Achievement Award from the Watumull Foundation for promoting and working for better eye care in India and throughout the world . . . **Sharon Bintliff** was honored by the March of Dimes Birth Defects Foundation for 15 years of service to the foundation . . .

The Hawaii Heart Association elected **Irwin Schatz** president and **Richard Mamiya** president-elect . . . **David Fergusson** was elected treasurer. New Board members include **Bernard Portner**, **Dennis Meyer**, and **John Gilmore** . . . Hawaii Heart Association grants were awarded to **Richard Guillory**, **Carl Hallenborg**, **YuChong Lin**, **Robert McKay**, **James Miyahara**, **Jeffrey Nakamura**, **Shoji Shibata**, **Robert Worth**, **Marian Melish**, and **Alfred Morris**.

St. Louis High appointed **Ralph Beddow** to the board as a new trustee . . .

The City Committee on the Status of Women named **Ann Barbara Catts** as one of 12 Honolulu residents for the award of Outstanding Women for the year . . . Ann was recognized for her dedication to the cultural atmosphere of Honolulu and for being the first woman president of the HMA in its 125 years of existence . . . Mayor Eileen Anderson did the honors at a Honolulu Hale reception in October . . .

**Frances Riggs** was appointed chief of the state Department of Health's Family Health Services Division by director **Charles Clark**.

*Continued on page 44*

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## Hors De Combat

Monthly charges for the Kaiser Foundation Health Plan will increase an average of 12.6 percent in 1983. Monthly charges for non-group plan members will be \$40.20, up from \$36.31 for a single subscriber. Subscribers with one dependent will pay \$79.90 per month and a family of 3 or more will pay \$119.60 per month, up from \$107.93. During the past 10 years, rate increases for the Kaiser plan have averaged 11 percent per year.

December 7 brought back memories for 3 surgeons, **Samuel Yee** (who had been in practice 3 years), **Verne C. Waite**, then 30 years old, and **Ralph Cloward**, who, at 33, was the only neurosurgeon in Hawaii and the entire Pacific . . . Sam reported to Tripler by 10:30 a.m. and he recalls, "It was just one casualty after another . . . We had one amputation saw in

the room and it was kept hot . . . There were so many mangled extremities, the saw was used, immediately sterilized, and then used again . . ." Verne was ordered to head to the hospital ship, the USS Solace, anchored on the mauka side of Ford Island . . . "The surface of the water around us was still burning and the whale boats were picking up survivors and the dead from the water. Most of them were already dead . . . The Arizona was already below the surface; the superstructure was sticking above the water and it was on fire. Several battleships were on fire and the oil on the water was burning. There was just a tremendous black haze over the area . . ." Ralph recalls, "As I got close to Pearl Harbor the holocaust became apparent . . . The noise was terrible; the little peanut bombers were coming from the mountains in waves and there would be huge explosions and then they would come back for the anti-aircraft

guns . . . All of Pearl Harbor was one black cloud of billowing smoke and flame . . ." Once in Tripler, Ralph noted, "There were the most horrendous casualties . . . They pushed a pair of gloves on me and said, 'Here, help this guy.' He had his belly ripped open and his guts were all over the table. I helped hold his guts in while they sewed him up . . ." Persons with head injuries were lined up outside under a tree . . . Ralph called his nurse, Edith Yoshioka, and told her to run to Queen's and bring his surgical instruments. "She worked with me around the clock 24 hours a day for three and a half days without stopping. It was a real marathon . . . Many simply couldn't be helped . . . There were so many casualties and we only had two hands . . . We couldn't operate on everybody . . ." On the evening of the fourth day, Ralph headed home after having performed more than 40 operations.



Harry L. Arnold Jr., M.D.

rather like a lens to achieve sharper focus of the ultrasound image. Bob Healy of Technicare's Marketing Department, 90 Inverness Circle East, Englewood, Colo. 80112, has details for you, including a paper titled, "Imaging Properties of Dynamically Focused Annular Arrays."

\* \* \*

Mead-Johnson announces the introduction of TraumaCal, a nutritionally complete, high-nitrogen liquid supplement for multiple trauma and burn patients. It affords 1.5 calories per ml, 22% of them as protein, and with each 3000 calories (2000 ml), 100% of the U.S. RDA for all vitamins and minerals, plus extra C, E, and B-complex, calcium, phosphorus, copper, and zinc. Available as of January 1, 1983.

\* \* \*

*Continuous ambulatory peritoneal dialysis (CAPD) costs about half as much as hospital dialysis and one-sixth less than home dialysis, according to the AMA Council on Scientific Affairs (JAMA, November 12, 1982), and Abbott Laboratories' just-announced 15% reduction of the price of its dialysis fluids will lower the cost a little further.*

\* \* \*

An easily installed, self-contained, contoured toilet seat which delivers a fine spray of warm water to the perineum at the touch of a button and can be operated by the patient is now available as Trileen Corp.'s AB300 Series Showerlet, for about \$465, or \$420 without the heater. They're in Costa Mesa, Calif., 92626; write Jean Braun at 3187-C Airway Ave.

\* \* \*

*If fetal lung maturity assessment is useful to you, you should know that Hana Biologics, of Berkeley, has a new immuno-*

*diagnostic kit that does this faster and more simply than any other currently available technique. They call it Amniostat-FLM. It detects phosphatidylglycerol (PG) at a level of 2 mg/l in an 0.1 ml sample of amniotic fluid, using an immunologic agglutination reaction instead of the technically difficult and slow thin-layer chromatography. It costs \$300 for a set of 12 kits.*

\* \* \*

Extensive courses in aquatic medicine, approved for CME credits by the AMA through the Undersea Medical Society up to 26 Category 1 hours, will be offered this year through See & Sea Travel Service, 680 Beach St., San Francisco, Calif. 94109. Write for their booklet and brochures. February 26 to March 5 in Belize, April 23 to May 8 in the Philippines (12 members each) and July 12 to August 8 at Truk Lagoon (18 members) have been announced. (Watch out for cholera in Truk!)

\* \* \*

*A device which permits ultrasound imaging for insertion of needles to drain body fluids is announced by Philips Ultrasound, 2722 S. Fairview St., Santa Ana, Calif. 92704.*

\* \* \*

Could you use a modern 3-channel, 12-lead EKG machine? Litton (777 Nicholas Blvd., Elk Grove, Ill. 60007) has just announced 2 new models. Darlene Case, at (312) 664-5558, will give you the word on them.

\* \* \*

*Allergists alert! The Western Society of Allergy and Immunology will meet in the Hotel del Coronado in San Diego, October 20-22, 1983. Plan ahead!*

\* \* \*

You read about nuclear magnetic resonance imaging in these pages over a year

HAWAII MEDICAL JOURNAL

Gamma Biologicals announced automation of the Coombs test with their Gamma STS-A (Standardized Test System—Antiglobulin), and already have demonstrated the instrument at the recent meeting of the American Association of Blood Banks. FDA licensing is expected in 1984. You read it right: 1984.

\* \* \*

*Approved in November 1982 for marketing was Marion Laboratories' Cardiazem (diltiazem hydrochloride), a calcium slow-channel blocker for treating angina pectoris in patients unresponsive to or intolerant of beta blockers.*

\* \* \*

A seminar on breast imaging by X-ray and ultrasound mammography, thermography, diaphanography, and nuclear magnetic resonance will be held April 8 and 9 at the Washington, D.C. Marriott Hotel. Susan Reif, TBU Training Center, 130 South 9th St. 210, Philadelphia, Pa. 19107, has all the details.

\* \* \*

*Technicare Ultrasound, sponsors of the foregoing meeting, have adapted the principle of dynamically focused annular arrays in their new Autofocus Probe, which acts*

ago, and now General Electric Co. offers a 12-page guide to site planning considerations for installations of NMR imaging systems. Write to them at Box 11944, Milwaukee, Wis. 53211-0944 (here comes that 9-digit Zip Code). For example, you can't just install one in an existing building. A ceiling height of 14 feet is necessary if you have a vertical helium transfer tube (whatever the hell that is). And the NMR machine will distort neighboring instruments which use an electron beam, aka cathode rays. Buck Rogers, here we come!

\* \* \*

Schering Laboratories announces "Xero-Lube," a saliva substitute for people who suffer from dry mouth (xerostomia). The American Dental Association endorses it.

\* \* \*

The National Heart, Lung & Blood Institute (NHLBI) has issued its eighth director's report, and you can have a copy of it by writing to the Public Inquiries & Reports Branch, Box 8, NHLBI, Building 31, Room 4A21, Bethesda, Md. 20205.

\* \* \*

Robert Van Reen, professor of food science and human nutrition in the College of Tropical Agriculture and Human Resources at the University of Hawaii, believes fat people are fat because they cannot dissipate ingested calories in the form of heat as well as thin people can. If so, one wonders why they tolerate heat so badly and sweat so much more than thin people do.

\* \* \*

An Australian study reported in the August 7 Lancet shows that melanoma incidence is doubled in persons who work under fluorescent lights in offices, and after 10 years of such exposure it is more than quadrupled. Mylar plastic filter panels would seem to be a prudent precaution, but the results are not yet regarded as conclusive.

\* \* \*

Otolaryngologists ought to be interested in Midmark Corporation's new otolaryngology chair and procedures center. Write to them at Versailles—Ohio 45308, that is.

\* \* \*

Favorite Island recipes—100 of them—with a low-salt twist are available now in "Salt . . . Who Needs It?", a new cookbook just published by the Hawaii Heart Association and the Hawaii Dietetic Association and available at \$3.95, or \$4.95 by mail order. Can you imagine palatable kim chee, Portuguese bean soup, and Korean barbecue sauce without salt? HHA is in the phone book.

\* \* \*

Recombinant DNA is out of the laboratory and into the practice of medicine already:

Lilly announces Humulin, the first product of recombinant gene technology to come into the medical marketplace. It is human insulin made through the technology of genetic engineering.

\* \* \*

Halcion, a prescription hypnotic for fast sleep induction offered by Upjohn, has just received FDA approval.

\* \* \*

Want a sheepskin for bedfast patients? Tandy Leather Company, Box 2934, Fort Worth, Texas 76113, will sell you as many as you want, 10 to 12 square feet in size.

\* \* \*

Precocious puberty can be arrested by daily injections of a newly developed preparation of luteinizing-hormone-releasing hormone, says the National Institute of Child Health & Human Development.

\* \* \*

Beware of diet pills containing phenylpropanolamine: they may cause acute kidney failure, say Robert Swenson et al. in the September 10 issue of JAMA.

\* \* \*

Cyclosporin A is an important newcomer to the field of immunosuppression for transplant surgery, and a reason why heart transplants are on the increase, say Bruce Reitz and Edward Stinson in the September 10 JAMA.

\* \* \*

The names and international non-proprietary names of more than 18,000 drugs are catalogued in the newly issued 1983 edition of the USAN and the USP Dictionary of Drug Names. Price: \$35.

\* \* \*

Azlin (azlocillin) has just been approved by the FDA for treating *Pseudomonas aeruginosa* infections. It's given intravenously.

\* \* \*

A new non-invasive blood pressure monitor, Lifespan 100, is enhanced by Biochem International, Inc., W238 N1650 Rockwood Dr., Waukesha, Wis. 53186.

\* \* \*

The up-to-date 3rd edition of the Doctor's Tax Manual, a step-by-step book of year-round tax guidance for 1983, has just been issued by Matthew Bender and Company; send \$24 to Michael Shor at the firm, 345 E. 45th St., New York, N.Y. 10017. There's a special section on "audit triggers."

\* \* \*

A free copy of "In Brief: Alcohol and the Elderly" is available from the National Clearinghouse for Alcohol Information, Box 2345, Rockville, Md. 20852.

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**25,500,000 geriatric**

**patients.** The older patient may have some disorder or socioeconomic problem that can undermine good nutrition.<sup>2</sup>

**23,500,000 surgical**

**patients.** Nutritional status can be compromised by the trauma of surgery; and some operations interfere with the ingestion, digestion and absorption of food.<sup>3</sup>



**Before prescribing, please consult complete product information, a summary of which follows:**

Each Berocca® Plus tablet contains 5000 IU vitamin A (as vitamin A acetate), 30 IU vitamin E (as *dl*-alpha tocopheryl acetate), 500 mg vitamin C (ascorbic acid), 20 mg vitamin B<sub>1</sub> (as thiamine mononitrate), 20 mg vitamin B<sub>2</sub> (riboflavin), 100 mg niacin (as niacinamide), 25 mg vitamin B<sub>6</sub> (as pyridoxine HCl), 0.15 mg biotin, 25 mg pantothenic acid (as calcium pantothenate), 0.8 mg folic acid, 50 mcg vitamin B<sub>12</sub> (cyanocobalamin), 27 mg iron (as ferrous fumarate), 0.1 mg chromium (as chromium nitrate), 50 mg magnesium (as magnesium oxide), 5 mg manganese (as manganese dioxide), 3 mg copper (as cupric oxide), 22.5 mg zinc (as zinc oxide).

**Indications:** Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions, including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals; certain conditions resulting from severe B-vitamin or ascorbic acid deficiency; or conditions resulting in increased needs for essential vitamins and minerals.

**Contraindications:** Hypersensitivity to any component.

**Warnings:** Not for pernicious anemia or other megaloblastic anemias where vitamin B<sub>12</sub> is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B<sub>12</sub> deficiency who receive supplemental folic acid and who are inade-

quately treated with B<sub>12</sub>.

**Precautions:** *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

**Adverse Reactions:** Adverse reactions have been reported with specific vitamins and

**5,000,000 hospital patients with infections.**<sup>4</sup> Many are anorectic and may have a markedly reduced food intake. Supplements are often provided as a prudent measure because the vitamin status of critically ill patients cannot be readily determined.<sup>3</sup>

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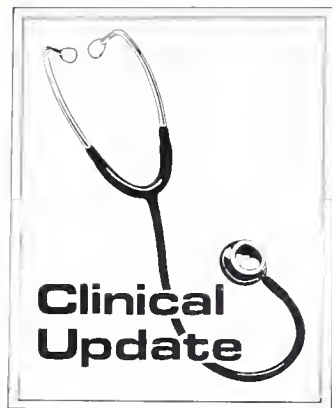
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# Aspiration Pneumonia: A Medical Emergency

Douglas G. Massey, M.D., and James Lumeng, M.D., Honolulu

Aspiration pneumonia is a life-threatening syndrome occurring in its most dramatic form as Mendelson's syndrome in obstetrics but encountered by most physicians at one time or another. Significant recent therapeutic advances in its management have prompted this review.

As it is basically a pulmonary edema due to a considerable amount of fluid suddenly entering the airways, primary aspiration of large or small solids will not be discussed; nor will aspiration of oropharyngeal secretions, because they usually result in indolent disease.<sup>1</sup>

## Predisposing Factors

One population at risk is composed of healthy individuals in a hostile fluid environment such as the ocean, or engaged in siphoning kerosene or gasoline. Another has disturbed consciousness, commonly due to alcohol, sedation, general anesthesia, cerebrovascular accidents, or debility. This latter group frequently has diminished airway defenses due to local disturbances, e.g., vocal cord paralysis, tracheostomy, pharyngeal pouch, nasogastric tubes, or esophageal disease. In the elderly, esophageal motility defects, such as tertiary waves, are common and usually asymptomatic, but one wonders as to their contribution to aspiration pneumonia so common in this group. Certain conditions such as pregnancy are characterized by voluminous gastric contents and low pH.

## Pathogenesis

The respiratory system is well protected against certain fluids: even if normal saline does reach the alveoli, little damage results. However, when volume

is excessive or its characteristics unfamiliar serious damage can result.

Acidity traditionally has been considered to be the injurious factor,<sup>2,3,4</sup> especially a pH below 2.5. This is not surprising as the bronchial secretion is alkaline. Recently, it has been demonstrated that a fluid with a pH of 4.5 can be injurious.<sup>3</sup> The acid results in a florid bronchitis, release of histamine, destruction of surfactant, and hyperpermeability of the capillary endothelium.

However, increasing attention is being paid to other factors:

1—The minimal significant volume of aspirate is 20-25 ml in the adult.

2—Osmolarity influences the effect of fresh and salt water. Put simply, in a minute or two, fresh water, in contrast to isotonic saline which is relative innocuous,<sup>2</sup> leaves the alveoli for the pulmonary capillaries and, in doing so, damages the capillary endothelium. Serum then leaks into the alveolo-capillary membrane and alveoli as edema.<sup>2</sup> Ocean drowning introduces fluid of osmolarity 3.0-3.5 M. This high oncotic pressure attracts serum from the pulmonary capillary into the alveolo-capillary membrane and alveoli, again as edema.

3—Surface tension is reduced by such products as gasoline and kerosene and the fluid spreads rapidly throughout the lungs. The severe pathophysiologic changes that follow are not completely understood.

4—Antacid. One of the most important recent developments is the demonstration that antacids themselves result in an aspiration pneumonia as severe as that which is acid-induced and, moreover, it persists much longer. Neutral or alkaline saline under the same conditions produces only a temporary shunt with hypoxemia.<sup>5</sup>

5—Large food particles can lodge in bronchi resulting in obstruction with hypercapnea and respiratory acidosis.

Complete obstruction can lead to atelectasis. Small particles can reach the alveoli and result in pneumonitis.<sup>3</sup>

6—Filtered gastric fluid at pH 5.9 result in a shunt with hypoxemia but not pneumonia.<sup>3</sup>

7—Bacteria can be present in fresh or salt water, or in gastric contents and, on occasion, add infection to the aspiration pneumonia.

## Pathology

Occasionally, inhalation of fresh or salt water leads to marked spasm of the vocal cords with little water entering the lower airways, i.e., dry drowning; the changes are those of asphyxia. Usually, however, water enters the lungs and results in edema of the alveolo-capillary membrane and alveoli.

Inhalation of hydrocarbons results in widespread necrosis and lung abscess.

Aspiration of acidic gastric contents produces a florid non-specific bronchitis and alveolitis as well as interstitial edema.<sup>6</sup> Food particles of various sizes may be present, the large leading to airway obstruction including atelectasis, and the fine to pneumonia.

## Clinical

Aspiration pneumonia generally occurs in 2 populations as indicated previously: in persons in a hostile fluid environment or in those with disturbed consciousness. Occasionally, the patient may note heartburn and an acid taste prior to the onset of the acute symptoms.

Within the hour, fever, tachypnea, and diffuse rales usually appear; in a third of cases, apnea, cough, wheeze, and cyanosis occur. With near-drowning, the patient may appear well, only to deteriorate in 24 to 48 hours with acute edema.

## Laboratory

Hypoxemia, characteristic and often profound, is essentially secondary to an anatomical shunt, although ventilation-perfusion disturbances also contribute. Hypercapnea and respiratory acidosis occasionally occur, manifestations of an obstructive syndrome due to food particles and perhaps decreased compliance.

Chest radiology typically shows a shifting, non-cardiac pulmonary edema or a mixed infiltrate in the lower zones, worsening over 24 to 48 hours and then clearing. Again, interpretation of an obstructive element suggests food particles, particularly if atelectasis is present.

Microbiology is seldom helpful.

## Differential Diagnosis

Confusion may arise with pre-existing cardiac disease, especially when the onset of the aspiration is not in a characteristic setting or has not been observed and the radiograph shows a mixed edema of permeability and hydrostatic type. A pul-

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monary wedge pressure or a therapeutic trial of diuretics and digitalis may be necessary.

The abrupt onset, clear sputum, negative microbiology, and rapidly altering clinical picture usually eliminate infection from the initial differential diagnosis.

### Therapy

**Prophylaxis.** This is the answer to the management of aspiration pneumonia, as active therapy is relatively non-specific and ineffective. The 2 significant advances are the demonstration that cimetidine, 300 mg t.i.d., reduces the volume and increases the pH of gastric fluid, and the realization that antacids can produce particularly severe and prolonged pulmonary damage.<sup>7, 8, 9, 10</sup>

Water safety education and the use of proper equipment for siphoning gasoline and kerosene will prevent many cases of aspiration via the mouth.

Disturbed consciousness often can be improved. It is particularly important not to potentiate it with sedatives or tranquilizers.

Local airway defenses can be reinforced, depending on the circumstances: nothing by mouth; temporary use of an endotracheal tube; thorough suctioning above the endotracheal or tracheostomy balloon, prior to deflating; sparing use of nasogastric tubes; early removal of all such tubes; gavage via a gastrostomy.<sup>11</sup> Nursing in the upright position and early mobilization should be stressed. As a last resort, permanent closure of the larynx combined with a tracheostomy may be necessary, the latter alone being often ineffective.<sup>12</sup>

If there is reason to suspect that stomach contents are voluminous, the stomach can be emptied by gastric tube immediately.

Prophylactic antibiotics can be useful when it is thought that the aspirate contains bacteria, i.e., the water where the individual was swimming.

**Active.** Aspiration pneumonia kills by causing respiratory failure. Correction of the acidosis and hypoxemia have priority; the latter may not respond to enrichment of the inspired air but may require such expiratory manipulations as CPAP and PEEP. Ventilatory support may be required for hypercapnea.

The pulmonary damage has not been shown to respond to corticosteroids.<sup>13, 14</sup> Bronchodilators such as choledyl, 200 mg q.i.d., and orciprenaline can be useful.

Occasionally, food is present in the airway and removal by bronchoscopy is necessary.

**Follow-up.** The acute incident can appear to be progressing well, but marked deterioration can occur in 36 to 38 hours, as in near-drowning. Close observation is necessary.

The education of the patient and his family as to possible recurrence and how to prevent it is important. Repeated aspi-

ration of small quantities by gastro-esophageal reflux can be considered in chronic bronchitis and asthma, but is unlikely to be associated with pneumonia. Continuous esophageal monitoring of pH and gastric radionucleotide studies may be necessary diagnostically.

### Prognosis

The morbidity and mortality of aspiration and its pneumonia is controversial, but in general is considered to have a bad prognosis. Most reports are retrospective analyses of experience in a given specialty and are applicable to related specialties with some approximation.

Improvement has been noted in the mortality statistics of near-drowning as pre-admission care has improved and a better understanding of the associated pulmonary edema has been gained.

In observed aspiration of stomach contents, some 40% of subjects have little evidence of difficulty, but the remainder go on to: fever 50%, hypotension 30%, radiological change 56%, and death 7%.<sup>14</sup> Acute respiratory failure carries a high mortality.

In those developing aspiration pneumonia, Lefrock has observed mortality of 30%, mainly due to pneumonia and lung abscess.<sup>15</sup> Bynum noted an initial mortality of 12%, clearing in 62% and relapse in 26 (of which 60% went on to die).<sup>16</sup> Survivors have an increased risk of subsequent bacterial pulmonary infection.<sup>17, 18</sup> Frequently, the generally precarious state of the host leads to death from such non-pulmonary entities as myocardial infarction and gastrointestinal hemorrhage.

Long-term pulmonary function seems to return to normal in the survivors.<sup>19</sup>

### Associations

Some 26% of patients aspirating gastric contents become infected, perhaps because aspiration of acid slows pulmonary clearance.<sup>20</sup> Mixed Gram-positive and negative organisms are present in 46%, Gram-positive in 15 and Gram-negative in 39%. The contribution of anaerobic organisms is controversial. Mortality is 3 times greater with infection. Therapy can be guided by sensitivity patterns; anaerobic aerobic infections generally respond to Penicillin G.<sup>21</sup>

Recently, repeated or chronic aspiration has been emphasized.<sup>22</sup> Diagnosis can be difficult, as only 50% of esophagoscopies will reveal esophagitis. Monitoring of esophageal pH can be useful, but the usual method of demonstrating repeated aspiration is to place a radioactive tracer such as technicium in the stomach via a nasogastric tube at bedtime and to "image" the lungs in the morning. In selected patients, blockage of the trachea surgically with a permanent tracheostomy can be helpful.<sup>23</sup>

*Continued on page 50*

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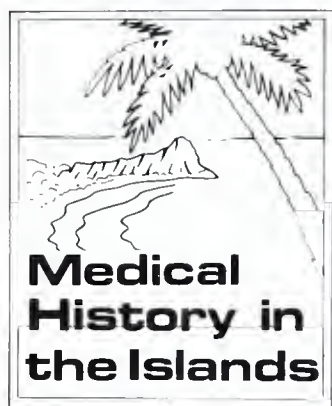


## Summary

Aspiration pneumonia is a life-threatening illness that follows sudden airway invasion by fluid from mouth (fresh or salt water, gasoline) or stomach (gastric contents). The setting is usually that of a hostile environment or a disturbed consciousness. The aspirate increases capillary permeability and edema results; variable airway obstruction can occur. These effects are compounded if the fluid is acid, decreases surface tension, and contains food or bacteria. Clinical suspicion, radiological change, and sudden hypoxemia are the diagnostic cornerstones; cardiac pulmonary edema and infection are the differential. Prophylaxis is the answer, with the accent on cimetidine replacing antacids, as the latter are less efficient and of themselves can cause severe prolonged lung damage. Active therapy is managing respiratory failure and infections, and, if necessary, removing solids by bronchoscopy.

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Charles S. Judd Jr., M.D.

## Military Hospitals

The first military hospital in Hawaii was opened in 1898 at Kapiolani Park in Waikiki. It was a 10-bed unit, built to care for troops of the New York Volunteer Regiment and a volunteer engineer group, who were the first United States soldiers garrisoned in the Islands.

Later that year, a U.S. General Hospital was established in Independence Park on King St. in Honolulu. This 100-bed facility cared for the sick and wounded evacuated from Manila and the Spanish-American War. Malaria and typhoid constituted the majority of clinical cases in the hospital. A typhoid epidemic resulted in the opening of temporary convalescent hospitals in Nuuanu Valley and on the slopes of Punchbowl soon after.

When the new post, Fort Shafter, was built on the outskirts of Honolulu in 1906, a modern hospital was constructed as part of the installation. In 1920, this hospital was named for Charles Stuart Tripler, brigadier general, medical director of the Army of the Potomac in the war between the states, and author of the

Army's standard manual on recruit standards.

After several additions, Tripler hospital increased its bed capacity to 432 by 1940. Shortly after December 7, 1941, it rapidly expanded to 1,000 beds, and developed subsidiary clinical units at several schools and at the State Hospital, Kaneohe. The total army bed capacity was 1,900 patients eventually, and the entire operation became known as the 147th General Hospital.

In 1944, work began on a new hospital on the heights at Moanalua, Oahu. This new Tripler General Hospital opened on September 10, 1948, with a bed capacity of 1,500, to accommodate not only Army patients, but patients from the Navy, Air Force, and Coast Guard, as well as

veterans. It played a prominent role in the care of the sick and wounded in the Korean and Vietnam conflicts and continues as an up-to-date facility serving all military personnel in Hawaii.

The establishment of Pearl Harbor as a U.S. Naval installation occurred in 1898. By the time of World War I, the Navy was maintaining a hospital there to care for the medical needs of its personnel. After the start of World War II, a large facility, to accommodate several thousand patients, was built on Aiea Heights, in the back of Pearl Harbor. It consisted of central permanent buildings and outlying one-story wooden structures. After the opening of the new Tripler General Hospital in 1948, the Navy began to utilize this latter facility.

## The Doctor's Wife (Abstracted from the Washington Medical Association Auxiliary Newsletter)

"Who will defend the Doctor?" asked the doctor's wife.

"Not I," said the Politician. "Medicare is the football in the Politician's game right now . . . I'd better keep my mouth shut."

"Not I," said the Lawyer. "The malpractice racket is going great . . . why some of us are cleaning up on it and really putting the squeeze on old Doc!"

"Not I," said the Dentist. "I'm just keeping quiet. I don't want them to start Denticare. Sorry!"

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"Not I," said the Businessman. "I've got enough worries of my own right now."

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"How much for the operation?" asked the doctor's wife.

"Well . . . actually the doctor's bill for the operation was \$250 and the rest was for the hospital bill," he replied.

"That's better," said the doctor's wife. "Too often the doctor is blamed for the hospital bill too."

"Who will defend the Doctor?" said the doctor's wife. None answered at all.

"Then I will do it myself," she said. And she did.

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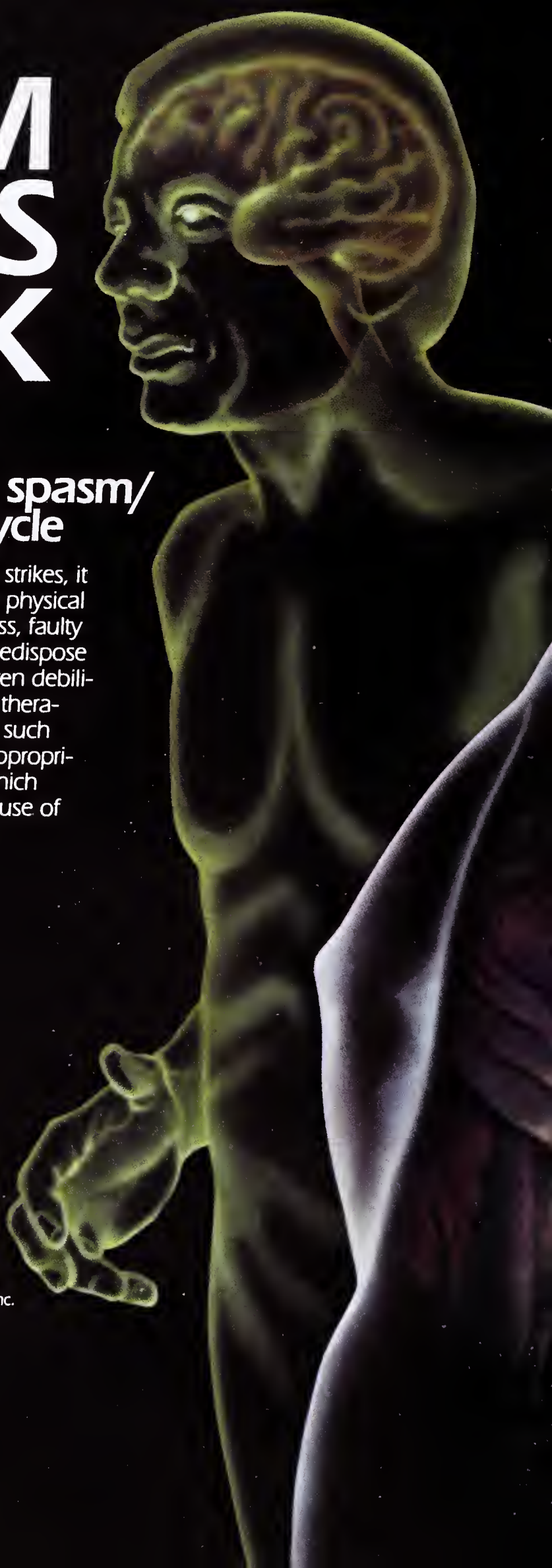


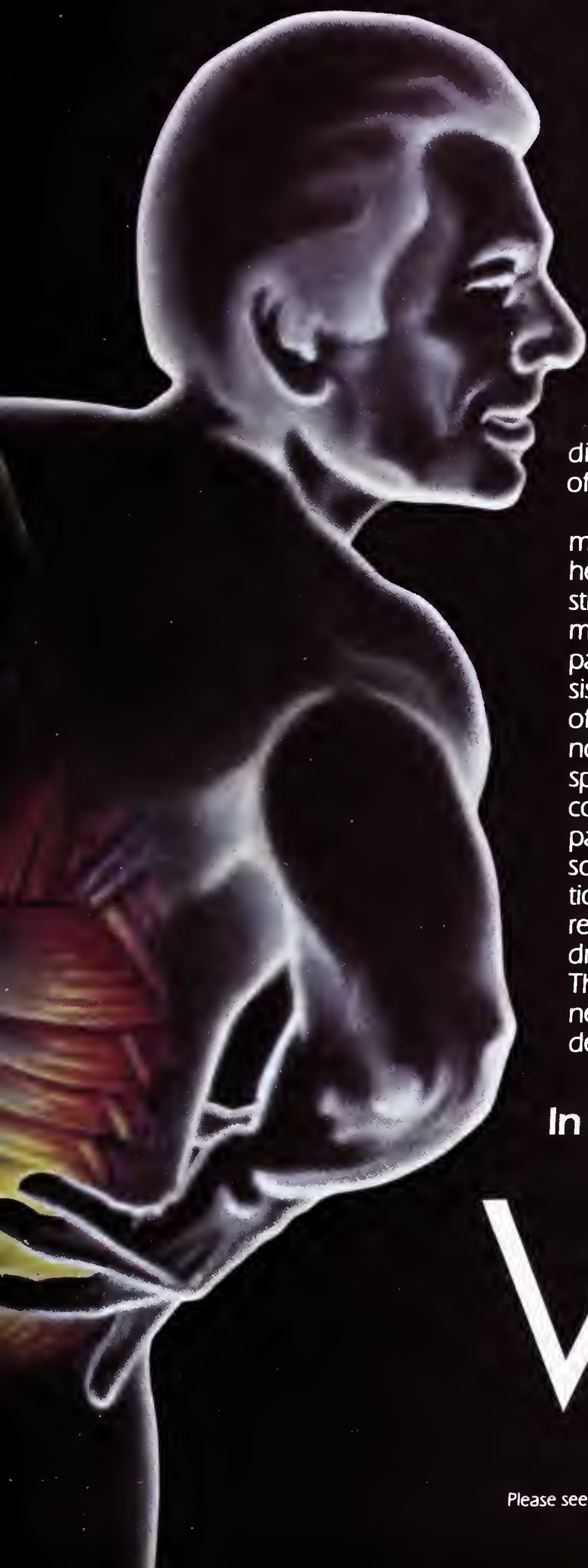
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The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anti-convulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anti-convulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

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## President's Message

Satchel Paige said, "Don't look back because something might be gaining on you." Medicine, likewise, has been continuously challenged by state and federal government controls relative to cost, financing, and quality of care. This has become more critical now with efforts to reduce government spending by decreasing health care costs for the poor and the elderly. This, of course, was to improve personal income to be spent on other less important activities. The cost of medical care continues to escalate, but so does the benefit to our patients. Nevertheless, cost-containment will become a primary issue this year. What will happen in the next 12 to 18 months will have a great impact on medicine for years to come.

Locally, the State Legislature must wrestle with declining revenues, rising costs, and shortfalls in the state budget. The Medicaid program budget submitted by the state administration slashed 12½% or \$25 million, of the program's request for funding. The Legislature, with deep concerns over the already pared-down social services for Hawaii, is looking at reducing its Medicaid program costs by waiver of free-choice of physician, outright cuts from physician reimbursements, contracts with HMO-type care programs, incentives for private-sector funding of additional non-acute care beds, and so forth. Your HMA remains diligent during this legislative session and needs both your input and support.

Nationally, the Tax Equity & Fiscal Responsibility Act of 1982 (TEFRA), caught our direct attention because of its devastation to professional corporations and related benefits, but its greatest impact for the future may be in two almost-overlooked sections. The first section is Medicare, under which cost-containment is explicitly spelled out. How, when, and how much hospitals are reimbursed for Medicare patients are detailed, with "efficient" hospitals rewarded and "non-efficient" hospitals penalized. This cost-cutting effort includes reimbursement for physician services in hospitals through the use of RCE (Reasonable Compensation Equivalents). Costs will be cut through the use of targeting on Diagnostic Related Groupings (DRG).

The second section is Utilization and Quality Control Peer Review which, first, repeals the old "PSRO" law, but establishes a new one! These new organizations, Peer Review Organizations, or PRO, will have the same basic functions as the old PSRO, except that objectives for each PRO will be negotiated with the federal government; medical associations are eligible to become PRO, and PRO will most likely be statewide. One question HMA must answer is whether or not the HMA, or a suitable subsidiary, should apply to be the PRO in Hawaii. Would quality control be left to other eligible organizations i.e., HMSA, the Department of Health, and DSSH?

These two issues of Medicaid and the PRO must be dealt with immediately. You will be hearing from HMA and HMA must hear from you!

Improving health care through public education has been one of the goals of your HMA. Previous efforts have been terminated for lack of financial commitment, but your TV-Radio Committee, chaired by Dr. Danelo Canete, has continued efforts to provide public education.

"Body Talk" was created by KHET, public television, and your committee has cooperated with this effort. Controversial subjects will frequently be presented, as need be. Your Association has no authority to edit these presentations, but we are grateful for the chance to respond to and contradict various claims. This item is brought to your attention and the issue addressed in appreciation of the efforts of Drs. Dan Canete, Dr. Rowlin Lichter, and your committee. Please watch and comment!

Calvin Kam, M.D.  
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## Editorial

# Rabies! Reducing Animal Quarantine Could Be Costly and Dangerous

It would cost over **four** times as much to have a 30-day quarantine against rabies as it would to maintain the present 120-day one, and nearly **five** times as much were Hawaii to have a rabies outbreak as the result of such an ill-advised slackening of our vigilance against this dreadful, almost incurable disease.

Our existing state program, estimated to be almost twice as effective as a 30-day quarantine would be, costs a little over \$1 million annually, and importers of pets pay 86% of this; the precautions necessitated by a 30-day quarantine period would raise the cost to over \$4.5 million a year, and owners of animals already residing here would have to bear 75% of this amount. These are the estimates made by David Sasaki, DVM, and John Gooch, DVM, in an article soon to be published.

A single rabies outbreak, over and above the dreadful toll in morbidity and mortality, would probably cost well over \$5 million. And physicians here would forever after have to wrestle with that awful and sometimes unanswerable question that must be asked wherever rabies is endemic: is or was that dog—or mongoose, or bat—rabid?

The incidence of animal rabies in the U.S. has nearly tripled in the past 6 or 7 years. Hawaii is still blessedly free from the disease. There is a fairly plausible case in favor of **increasing** our quarantine period from 3 months to 9, which would detect **all** incoming cases of rabies. There is none at all for reducing it to 30 days, except for the selfish and shortsighted view that importers of pets take in their own interest.

We must maintain our present quarantine law, and keep Hawaii free from rabies. This priceless heritage must be preserved intact for future generations!

HLAJr

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## Continuing Medical Education

## CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

(Accredited programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks.")

### LOCAL ACCREDITED PROGRAMS ONGOING

For a complete list of ongoing programs, please refer to the October 1982 issue of the HAWAII MEDICAL JOURNAL. Further information regarding ongoing events is available through the individual institutions or through the HMA's CME Department.

### SPECIAL EVENTS

March 14-18, 1983 Allergy and Dermatology. Contact: Symposium Maui, Inc., P.O. Box 10185, Lahaina, Maui, Hawaii, 96761. At: Royal Lahaina Resort, Kaanapali Beach, Maui, Hawaii. Hr. for hr. to 22 hrs.

March 14-18, 1983 University of Hawaii Sports Medicine Course, 18 hrs. Cat. I. At: Princess Kaiulani Hotel, Waikiki. Contact: Joy Lewis, Box CE-CCECS, 2530 Dole St., Honolulu, Hawaii 96822, (808) 948-8244.

March 28-April 1, 1983 Update in OB/GYN 1983, ACOG Hawaii Chapter, 24 hrs. Cat. I. At: Kona Surf Hotel, Big Island, Hawaii. Fee: \$300.00. Contact: Dee Chang, 1319 Punahou Room 816, Honolulu, Hawaii 96826, (808) 947-8573.



**HMA  
Council  
Meeting**

### Highlights, December 10, 1982 Meeting

- AMA membership in Hawaii increased so that HMA now has an additional delegate to AMA. Until next formal election, Council has elected Dr. Will Iaconetti as the second delegate, and Drs. Cal Kam and Sakae Uehara as Alternate Delegates.

- In keeping with Resolution 8 of the 1982 HMA House of Delegates, the Council elected Dr. Richard Ando as vice-speaker.

- 1983 HMA Annual Meeting will be at the Hotel Intercontinental, Maui, over Discoverers' Day weekend; travel expenses to be borne by councilors and delegates or their respective component societies; registration fee for annual meeting will be \$150, with fee waived for HMA members.

- Promotion of sales of HMJ Directory of Hawaii Physicians.

- HMA Legislative and Insurance committees were instructed to pursue a grant for an HMO-type project for Medicaid.

- Council acted to provide that both participating and non-participating physicians be represented on the HMA/HMSA Liaison Committee.

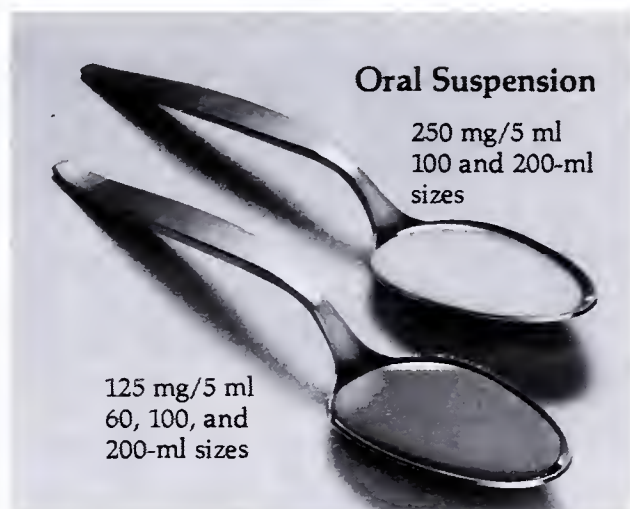
- The Communicable Disease Committee is directed to review the safety and use of the hepatitis-B vaccine following report on discussion at the AMA.

- Dr. George Mills will be seeking re-election to a third term as AMA Trustee and Council voted to support his campaign financially.

(A full copy of the minutes available at the HMA office and at the offices of component societies for perusal by any member.)

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# Dilated Cardiomyopathy in Hawaii

## A Retrospective Study of 13 Patients

By Patricia M. Bauman\* and David J.G. Fergusson, M.D., Honolulu

*We present a retrospective study of the presentation and progress of 13 patients with moderate or severe dilated cardiomyopathy (DCM). While many such studies have been published,<sup>1-7</sup> we provide information about the disease in Hawaii, specifically, to evaluate the clinical impression of one of us (D.J.G.F.) that the course in these patients has been more benign than in comparable reported series.*

### Case Selection

In all cases, the diagnosis was established at Straub Clinic & Hospital. They were individuals from a consecutive series of patients undergoing cardiac catheterization, meeting the criteria for moderate-to-severe DCM without other cardiac disease. Comprehensive follow-up data are available for the 9 patients who were subsequently followed at this institution, hereafter designated as "followed patients." The other 4, termed "referral patients," were referred only for diagnosis, and follow-up information is incomplete, though it is known whether they were still alive at the end of the study. The patients were initially seen between November 1970 and April 1978; the follow-up period ended in June 1981. The duration of follow-up was 38 to 125 months, with a mean of 73 months. Evaluation of all pa-

disease, thyroid dysfunction, or anemia.

Three of the subjects had drunk alcohol excessively, and 3 gave a history of respiratory infection within a month preceding the diagnosis. One developed evidence of diabetes mellitus 7 years after the diagnosis of cardiomyopathy was made.

### Findings

All 13 subjects were men, 6 Caucasians (Europeans), 5 Japanese, and 2 Filipinos. At diagnosis, their ages ranged from 27 to 65 years, with a mean of 48 years. Of the 13 patients, 1 died during the period under review (Table 1).

TABLE 2. Presenting symptoms of all patients

Symptoms	No. of Patients
Symptoms of CHF	8
Chest pain	5
Palpitations	3
Syncope	1
Other	6

Table 2 gives the presenting symptoms. Symptoms of heart failure were most common. The duration of symptoms before diagnosis was from 1 day to 6 years,

with a mean of 1.8 years. One patient was asymptomatic, having been referred because of unexplained cardiomegaly. "Other" includes cough, nausea, fatigue, and diaphoresis.

TABLE 3. Comparison of symptomatic state at the end of study with that at entry (9 followed patients)

	Number of Patients
Became asymptomatic	3
Markedly improved	3
Partly improved	1
Unimproved	1
Died	1

Table 3 indicates that 6 of the 8 surviving followed subjects experienced clearing of all or most symptoms with treatment. In some instances, symptoms returned but later improved with modification of therapy.

The presenting symptoms of the single fatality were shortness of breath, chest tightness, and cough. All were of 14 days' duration before diagnosis. He improved after initial treatment, remaining stable for 4 years, but symptoms returned and worsened in January 1981, persisting until the patient's death 4 months later.

Of the 13 cases, 10 presented with either symptoms or signs of CHF. Evidence of heart failure on the chest film at diagnosis was seen in 7.

Table 4 presents the distribution of EKG findings of all subjects. All cases

*Continued on page 62*

TABLE 1. Ethnicity of the 13 subjects

Ethnicity	No. of Patients	Died
Caucasian (European)	6	1
Japanese	5	0
Filipino	2	0

tients included a complete history and physical examination, EKG and cardiac catheterization and angiography. Stress testing was performed in some, and echocardiograms were done on the more recent cases. As the latter two procedures were part of the work-up for only a few patients, the resulting data are not included in this report.

Patients were excluded from the study if they had hypertension, significant narrowing (greater than 50% reduction in diameter) of any coronary artery, congenital heart disease, primary valvular

\* Fourth-year medical student, University of Illinois

TABLE 4. EKG abnormalities of all 13 subjects

EKG Sign	No. of Patients	EKG Sign	No. of Patients
LAE	3	PAC's	2
LVH	4	PVC's	3
LBBB	5	PAT	1
RBBB	1	Sinus tachycardia	4
LAD	1	Atrial fib.	4
R ant. hemiblock	1	Atrial flutter	1
L ant. hemiblock	1	Sinus bradycardia	1
1° AV Block	2	ST-T Abn.	7
Poor R Wave Progress	1		

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TABLE 5. Cardiothoracic Ratio (CTR)  
Data for All Patients

Patient No.	CTR at Diagnosis	Latest	% Change
Surviving 1	.56	.57	+ 2
Followed 2	.69	.74	+ 7
Patients: 3	.47	.48	+ 2
4	.64	.50	- 22
5	.52	.51	- 2
6	.55	.43	- 22
7	.55	.50	- 9
8	.58	.52	- 10
Mean:	.57	.53	- 7
Deceased Patient: 9	"Within normal limits"	.56	at least +12
Referral Patients: 10	"Heart enlarged"		
11	.57		
12	.54		
13	.46		
Mean:	.52		
Mean CTR at diagnosis, all patients:			0.56
(Standard deviation = .0039)			
Mean latest CTR, all followed patients:			0.53
(Standard deviation = .0067)			

TABLE 6. Change in NYHA  
Classifications of Followed Patients

Patient No.:	Initial Class	Final Class	Change*
1	4	1	-3
2	1	2	+1
3	2	2	0
4	1	1	0
5	3	1	-2
6	4	1	-3
7	1	1	0
8	4	3	-1
9	4	died	

\* A negative change indicates improvement.

TABLE 7. Cardiac catheterization data  
and M/V ratios at diagnosis

Patient No.	Ejection Fraction %	LVEDP** mmHg	M/V Ratio
1	32	18	.96
2	20	8	1.03
3	45	10	1.02
4	46	8	.53
5	42	28	.67
6	27	12	.94
7	42	2	1.35
8	18	18	.84
9*	28	11	1.09
10	10	5	.70
11	22	16	1.95
12	25	8	.89
13	46	12	1.74

\* Deceased

\*\* L. vent. end diastolic pressure

## Cardiomyopathy

*Continued from page 60*

had an abnormal EKG at diagnosis, and 9 had at least one form of arrhythmia at that time.

Table 5 lists the cardiothoracic ratio data for all subjects. Seventy-seven percent had a CTR of more than 50% at diagnosis. A few of the chest films taken at diagnosis were no longer available for inspection, and only descriptive terms from the reports are given in the table.

Three patients suffered thromboembolism during the course of their disease. The deceased patient had multiple pulmonary emboli during the 5 months preceding his death. Two patients had developed emboli prior to the diagnosis of cardiomyopathy, one to a cerebral, and one to a femoral artery.

Table 6 gives NYHAC (New York Heart Association Class) data for all subjects. It can be seen that 8 of 9 followed patients remained in the same class or improved.

Table 7 correlates the cardiac catheterization data and mass/volume (M/V) ratios for all 13 cases. Field<sup>8</sup> suggested using the ratio of left ventricular mass to end diastolic volume (LVEDV) as a measure of the relative degree of left ventricular hypertrophy. We used the formulae of Rackley et al.<sup>9</sup> for mass and vol-

ume to calculate the ejection fractions (EF) and M/V ratios. Standard deviations are 12 for EF and 0.17 for M/V. No relationship between EF and M/V ratio was found. The correlation coefficient between these values is 0.0013, the Student t test for significance of this value yields a result of 0.004.

We found no correlation between M/V and NYHAC at diagnosis, EF and NYHAC, EF and change in NYHAC, or M/V ratio and change in NYHAC.

It is probable that the left ventricular and diastolic pressures were found to be rather low because nitrates were routinely given at cardiac catheterization when most of these patients were diagnosed.

## Discussion

The subjects of this study had similar demographic characteristics as reported elsewhere,<sup>11</sup> i.e., usually middle-aged at diagnosis and male. No women were in this small series.

The usual presenting symptoms and signs were found, as in other papers,<sup>2, 11-14</sup> with a few exceptions. Fewer of our patients complained of fatigue or demonstrated PVCs, first degree AV block or mitral insufficiency, while more of them experienced chest pain. None were found to have ventricular tachycardia. The subjects did have moderate to severe DCM

as judged by the EF. All the patients had LVEDVs greater than 2.24 times the maximum normal and in excess of 200 ml/m<sup>2</sup>, conditions which have been said to indicate a poor prognosis.<sup>15-16</sup> However, the course of the disease has been unusually benign in these patients. There has been only one death during the 11-year period since the earliest case was diagnosed. In a representative study,<sup>1</sup> the death rate was 77% after 10 years, while ours was 8%. The normal approximation test to the binomial yields a value of -5.90 (p<.001) demonstrating the two death rates to be significantly different.

The reasons for the relatively benign course and good prognosis uncovered in the study are not clear. Field<sup>8</sup> found that the M/V ratio was a reliable prognostic indicator, with an M/V of less than .90 signifying poor prognosis. No such relationship was found in this study. The ejection fractions were similar to those of other studies.<sup>6, 8</sup>

Since 5 of the patients are of Japanese ancestry, one could postulate that ethnicity plays a role. However, the Japanese literature<sup>17-22</sup> reports a similar presentation and natural history as in western studies.

The etiology of DCM is not fully understood. The benign course of the dis-

*Continued on page 64*

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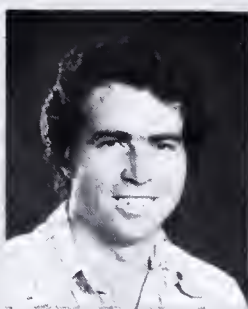
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ease in this study raises the possibility of causative factors different from those elsewhere. Alcohol is considered by many authors<sup>12, 14</sup> to be an important cause and its continued use to indicate a poor outlook. All 3 patients in our series who drank heavily reduced their alcohol intake. None died, 1 remained stable, and 2 improved.

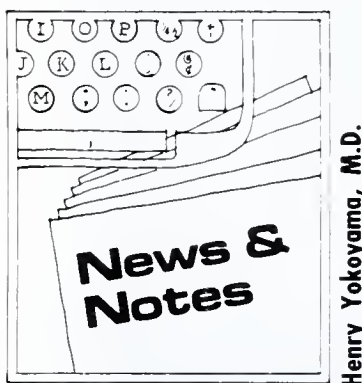
### Summary

This is a retrospective study of 13 patients with moderate to severe DCM taken from a sequential series of catheterized individuals and followed for 38 to 125 months.

An unusually benign course with unexpectedly low mortality was found. The reason for this is unclear, but the findings suggest that the prognosis for this condition, as seen in Hawaii, may not be as grim as indicated in other studies.

### ACKNOWLEDGMENT

The authors gratefully recognize Dr. Blair Bennett's assistance with statistical analysis.



## Professional Moves

Plastic surgeon **Bennett Lau** opened at the Queen's POB . . . On Maui, **Jeffrey Bittner** and **S. Michel Skolnick** opened for family practice in Lahaina Square . . .

## Physicians Speak Up

Retired Lt. Gen. Edgar Doleman berated the PSR (Physicians for Social Responsibility) for advocating non-compliance with CMCHS (Civilian Military Contingency Hospital Services). CMCHS advocates setting aside 50 beds for "casualties from a sudden and devastating overseas war." Our favorite columnist, **Fred Reppun**, responded, "For a hospital to set aside 50 beds for a nuclear holocaust is like planning to blow up a Sherman tank with a BB gun . . . PSR wishes to point out that compliance with the proposal is tantamount to accepting nuclear war as a "winnable war" which is to condone the use of these lethal weapons . . . Such prestigious medical institutions as the Massachusetts General Hospital, the Stanford Medical Center and our own St. Francis Hospital have refused to go along with CMCHS . . ."

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With the acquittal of presidential assailant John Hinckley Jr., psychiatrist **Denis Mee-Lee**, chief of the state Mental Health Division said, "Acquittal by reason of insanity—should be abolished. . . The insanity defense needs major surgery . . . It is archaic, anachronistic . . ."

## Life in These Parts

MADD meets in Hilo . . . The Mothers Against Drunk Drivers met last year at the office of Jiro Nakano with Mike Irwin as coordinator . . .

Pending congressional Bills H.R. 5180 and S. 1958 could actually save the Medicare program \$109 million in the first 5 years of passage, by allowing a patient with a physician-certified life expectancy of less than 6 months to elect to receive hospice care in lieu of all other Medicare benefits. At present there is relatively limited coverage of hospice services under most public and private insurance plans and many hospices have had to lean on foundation support or private contributions . . . (Hawaii has 3 hospices, i.e., the 12-to-20 beds at St. Francis Hospital; Hospice Hawaii with an office at 1750 Kalakaua Ave; and the Hospice of Maui, headquartered at 925 Mahalani St., Wailuku).

With genital herpes rampant, **Rick Williams**, gynecologist and medical adviser to HELP/Hawaii (a local herpes information and support group) reports that, fortunately, only one case of neonatal herpes occurs in Hawaii each year. In neonatal herpes, 50% of the infants die and those who survive suffer brain damage, blindness, deafness and other handi-

caps . . . It can be prevented by doing a C-section in a woman with active genital herpes at time of delivery. . .

About 50 infants die every year in Hawaii from Sudden Infant Death Syndrome (or SIDS), with the average in Hawaii of one SIDS death for every 1,000 live births. The national average is 2 to 3 infant SIDS deaths per 1,000 live births. **Dexter Seto**, UH med school pediatrics professor, is director of the Kapiolani Children's Hospital SIDS program. Dexter is researching viruses and the possibility that SIDS victims are hypersensitive to infections e.g., viruses. Others involved in SIDS research include **Michael Light**, director of the Pediatric Pulmonary Center; Yoshitsugi Hokama, professor of pathology; **Herbert Uemura**, pathology consultant; **David Crowell**, professor of psychology; **Scott Halstead**, chairman of the Department of Tropical Medicine and Microbiology; and **Rodney Boychuk**, neonatologist . . .

**Frederick Burkle**, emergency physician at Maui Memorial, (with the help of **Rod Bjordahl** and **Michael Savona**) has developed a treatment protocol for alcoholics. Fred says, "In the emergency room, we often spend many hours contacting a physician who is willing to admit an alcoholic . . . The psych unit refuses to admit alcoholics for detox without a primary psychiatric diagnosis. The medical floor has no detox training, let alone space and, often, patience with these individuals. In a word, it is a mess. Help!"

U of Hawaii's Look Laboratory at Kewalo will have at least 4 decompression chambers. Martin Rayner, chairman of the U of H Med School's physiology department, will coordinate activities, in-



cluding the training of volunteer attendants . . . Martin reports that 50 to 70 divers are treated for bends each year at Pearl Harbor and that the diving population numbers as high as 30,000. A simple bends case could cost \$1,000, while more complicated cases could run as high as \$5,000 to \$10,000. Ed Beckman, UH physiology professor and former Navy physician, will serve as research director.

A motion for a preliminary injunction to shut down the Campbell estate trustees' Hawaii Geothermal Project test plant at Pohiki, filed by Puna residents, was denied when physician **Richard Williams**, under cross examination, admitted he was not an expert on the effects of pollutants emitted by the well . . . Richard had not done the necessary homework, i.e., measuring the amount of  $H_2S$  in the air when the residents became ill.

Straub Clinic and Hospital is setting up a sleep disorder clinic with co-directors, psychiatrist-neurologist **James W. Pearce**, and neurologists **David Crowell** and **Kenneth Nakano** . . .

GMASCO (Global Medical Ambulatory Services Corporation—a firm that has been servicing medical equipment for hospitals in the U.S. and foreign countries for 25 years), has opened Medi-Mart Waikiki Clinic—a walk-in medical center staffed 7 days a week from 7 a.m. to 11 p.m. and located on the 4th floor of the Royal Hawaiian Shopping Center. **Martin Wolferstan**, medical director, says, "Walk-in clinics are located in inner cities and suburban shopping centers all across the Mainland and offer faster, less expensive treatment for the less severe emergencies that make up 80 to 90% of visits to hospital emergency rooms . . ." GMASCO plans to open other walk-in clinics throughout Hawaii in the future.

The local chapter of Ducks Unlimited (a national organization which raises funds to provide water-fowl habitats throughout the North American continent) had a Pacific Club auction dinner . . . "The dinner was not duck, but elk, bagged by **Gerry Dericks** while on 'safari' with wife Diane, in Idaho . . ." (From Ben Wood's Hawaii)

"Artist Ramsay and **Norm Goldstein** threw a 'little' cocktail and pupu party for 500 friends at the Plaza Club . . . Norm and Ramsay spent several weekends at the Plaza where she was doing pen-and-ink drawings of the 75-year-old Manhattan landmark . . ." (From Ben Wood's Hawaii)

**J.D. "Jack" Lewin**, FP at Kula Hospital on Maui, says "we have the choice to be healthy . . . We have the choice to eat good food, drink clean water, and breathe fresh air . . . We also have the choice to think productive, creative thoughts and to make positive contributions to society" . . . But not everyone takes the responsibility to make such

*Continued on page 66*

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choices . . . Jack worked 7 years with the Navajo and embraced their belief that healthy minds and bodies make healthy individuals and that healthy individuals make healthy families and communities . . . "The idea is not new," he admits, "just often forgotten."

Hawaii's first free-standing birth center opened in a 2-bedroom apartment near the Wahiawa General Hospital. The State Health Planning and Development Agency gave approval to Midwifery Options Hawaii and its nurse midwife, Tiffany Coleman, to establish the center. OB man **William McKenzie** will also be associated with the center . . .

**Tom and Henrietta Fujiwara** were guest exhibitors of their rare collection of paphediums at the Club 100 annual Orchid Show and Plant Sale in November . . .

**Noboru Oishi**, clinical director of the Cancer Research Center of Hawaii, was notified of a first-time grant of \$73,000 from the National Cancer Institute for the Center's clinical science program as part of the Southwest Oncology Group.

A state health department program is seeking Hawaii residents who may have been exposed to Agent Orange in Vietnam, Cambodia, or Laos between 1962 and 1971. William Rellahan is coordinator of the Agent Orange Program and his phone is 548-8705 . . . Acute symptoms include tingling, headaches, aching, nausea, and chloracne . . . In one study, Vietnam vets had common complaints of rash, joint pain and swelling, fatigue, persistent neurological complaints, loss of libido, cancer, gastrointestinal ulcerations, sterility, abnormal semen, birth defects, miscarriage, and kidney problems.

Wahiawa General Hospital is the latest to receive SHPD approval for a total body scanner . . .

**"NAKED CAME THE STRANGER:** While staying at a Waikiki hotel one weekend, local physician Robert Walcovy woke in the middle of the night and, thinking he was at home, stumbled out the door of his room. 'I guess I thought I was going to my bathroom' he remembers. As the door clicked shut behind him, he realized where he was—in the hallway of a Waikiki hotel at 2 a.m.—completely nude. He pounded madly on his door, but since he was staying alone, no one answered. Nearby was an outside exit with a lanai next to the lanai of his room. He considered climbing over from one lanai to the other, but thought better of it when he imagined what any passers-by or security guards might think. Instead, he hurried down the 'miles-long' hallway to the bathers' elevator and used its phone to call for help. 'Front desk,' answered a tiny, feminine voice. Walcovy hesitantly explained his plight; the desk clerk said she would send someone up. Finally, the bellboy unlocked Walcovy's

door and said nonchalantly, 'You're not the first . . . and you won't be the last.' " (Ed. We could not find "local physician Robert Walcovy" listed in the phone book . . . It may very well be a pseudonym . . . But we certainly would recommend that physicians at least wear shorts when going to bed in a hotel . . .)

Quotes from the annual Carnation Healthy Baby contest: "They (the baby finalists) arrived about 10 a.m. and waited outside the tall wooden doors that opened into a room where the judges were getting last-minute instructions from Dr. George Ewing . . . Ewing, a pediatrician, has been judging these contests for 20 years and is so good with kids that he leaves the phenobarbital at home . . . But there were some mothers who could have used it."

The Kalihi-Palama boy who attended St. Louis High and U of H on athletic scholarships and played varsity football, basketball, and baseball is now Hawaii's premier cardiac surgeon. **Dick Mamiya** started his "multiple bypass" surgery in 1975 and his success story became legend when Time magazine in 1977 reported his 350 bypass operations with no fatalities . . . the mortality rate is still a low 1% for the surgery teams he works with at the Queen's and Straub hospitals . . . "Does he ever think of slowing down? . . . Not now, when he finds his work so creative and so rewarding, he says . . . When it's not, then it's time to quit. I think it's important for a person to know when things are not what they should be." (From Advertiser staff writer Ann Cassel's article)

## Sportsmen

Sportswriter John Christensen reports that of the 10,258 who started the Honolulu Marathon in the damp darkness of the Dec 19 Sunday morning, 97.89% or 10,042 finished . . . Cardiologist **Jack Scaff** who is the father of the Honolulu Marathon, notes a paradox in the statistics . . . Jack says, "If you leave the open division out, the fastest age group is the 40-49 division . . . That's unusual, because we know that from the age of 25 on, your body gradually deteriorates . . . That means that the guys who are going the fastest are in a sense physically unsound, and it also means that they are working harder at it, giving up more and running closer to the red line . . . There's an increased potential for complications . . ." To explain why world class marathoners, including Craig Virgin, Jeff Galloway, Dean Matthews, and Dick Beardsley and women including Cindy Dairymple, Kim Merritt, and Jackie Hansen, watched from the sidelines instead of running, Director Kent Davenport, who invites and coddles the name runners explains, "There's big money in running now. Most of the best runners in the world are making good money these days—up to six figures—and most of the races they go to offer prize money."

Before the marathon, 46-year-old **James Gallup**, our running Honolulu pathologist, who is a 3-time Honolulu Marathon Masters Division winner and who sports a 2:32:32 run as his fastest, boasted, "I thrive on pressure . . . There's pre-race tension, of course, but I for one refuse to lose any sleep over it . . ." Jim predicted a 2:20:30 for himself . . .

Another Honolulu physician, 30-year-old **Jim Barahal**, won the second annual Patty Smith Memorial Run in November . . . The 5-mile-plus event was a fundraiser for cancer research, and approximately 900 participated. Jim had won the race last year and was in the lead when he made a wrong turn and added 300 yards to the course. Fortunately, the field followed him! . . .

We learned from *Advertiser* writer Mike Markrich's column "from the sea" that **Wilmot Boone** of Kona was a longtime fisherman and observer of "mu" (one of the most difficult of Hawaii's fish to catch or spear). Wilmot had developed a technique for spearing mu 30 years ago . . . He would dive to depths as great as 65 feet and hide behind a rock ledge. Then holding his breath, he would make a kind of underwater turkey call to attract the fish . . . The mu would come out and investigate, if the diver can stay there for 3 or 4 minutes without moving or breathing . . .

**HOLE-IN-ONE:** In June, **Joe Nishimoto** used a 5 iron to ace the 178-yard 8th hole in a Waialae Country Club shotgun tournament, to win the use of a Toyota Supra car for a year. It was Joe's 3rd hole-in-one at Waialae in the past 3 Junes . . .

In early October, "Maestro" **George Takushi** took time off from band practice to make a hole-in-one on the HICC 17th hole (reported by **Vic Mori**)

## HMA TENNIS RESULTS

Singles Tournament: 1st place: **Gene Doo**; 2nd place: **Jeff Nakamura**; 3rd place: **Dennis Maehara** and **Worldster Lee** (tie)

Doubles Tournament: 1st place: **Worldster Lee** and **Gerry Dericks**; 2nd place: **Jeff Nakamura** and **Ron Peroff**; 3rd place: **Cal Sia** and **Gene Doo** . . .

## Embarrassing Moments . . .

We were invited to the play "Sunshine Boys" at Ruger Theater . . . As we entered the lobby, we noted a well-dressed woman who looked vaguely familiar . . . We started down the aisle toward our seat, and the same gal confronted us and whispered into our ear, "Say Doc . . . Don't you recognize me with my clothes on?" We chuckled to ourself all through the boring play.



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Harry L. Arnold Jr., M.D.

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The 7th Western Hemisphere Nutrition Congress will take place August 7, 1983, at the Carillon Beach Hotel in Miami Beach, Fla. Deadline for abstracts, in case you'd like to be on the program, is March. Type it single space with the title in capitals across the top, in a space 5 1/4" wide and 5" high. Author(s) names on line 2, initial first, underlined, followed by institutional

affiliation, city, and country, and mail to the AMA at 535 N. Dearborn St., Chicago, Ill. 60610.

\* \* \*

Need a competent ENT locum tenens? Harry A. Baers, M.D., Hawaii medical license 0424, is available at 261-8847, or at 572-A N. Kalaheo Ave., Kailua 96734. All branches of surgical otorhinolaryngology are his bag; he has been board certified in these since 1950.

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Canned vegetables free from added salt or sugar are now available as Libby's Natural Pack in the form of 12 products in 33 varieties.

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Cost containment and cost effectiveness are receiving intensive study by the AMA and a number of county and state medical societies, and the AMA began in October a monthly publication, the *AMA Cost Effectiveness Bulletin*, to provide an information network and share news of what's going on in these fields nationally.

\* \* \*

After 3 years of clinical trials at 5 medical centers, COBE Laboratories' membrane-based therapeutic plasma exchange (TPE) system has just become the first such system to receive FDA approval. Treatment of such disorders as Goodpasture's syndrome, myasthenia gravis, multiple myeloma, familial hypercholesterolemia, and systemic LE should be much easier and more effective using this new system. It is the first such system to use the principle of membrane plasma separation. Write them at 1201 Oak St., Lakewood, Colo. 80215.

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The new FLEXIFLO-II Portable Enteral Nutrition Pump, by Ross Laboratories, might be just what you need. Write them in Columbus, Ohio 34216, if you're interested.

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"Sof-care" chair or wheelchair seat cushions, a new product, are announced by Gaymar, One Bank St., Orchard Park, NY 14127.



Clinical Pathologist's Easy Chair

Francis Fukunaga, M.D.

## Iron Deficiency and Serum Ferritin

Anemia is the last stage in the progressive depletion of iron from the body stores. The first stage of iron depletion can be detected by the decrease of iron in bone marrow and the measurement of serum ferritin. The second stage is the period of iron-deficient erythropoiesis. The serum iron decreases, TIBC increases, and the iron-binding saturation falls below 15%. Decreased serum iron can also be due to chronic infection, inflammation, and malignancies. The third and last stage of iron depletion is anemia, which is usually microcytic and hypochromic. There are other causes of microcytic anemias (MCV under 80), such as thalassemia minor, sideroblastic anemia, lead poisoning, and many anemias of chronic diseases where the serum iron is low but the TIBC is also low and the iron stores are either normal or increased.<sup>1</sup>

Except for hemoglobin, ferritin is the most abundant iron-containing protein in the body. It is an iron-protein complex and is found predominantly in the liver, spleen, and bone marrow. It is the storage

form from which iron can be mobilized in response to blood loss, hemorrhage or dietary change. Of the 4 to 5 grams of total body iron, 65% is in hemoglobin, 15-20% in ferritin and the remainder in hemosiderin, myoglobin and iron-containing enzymes.<sup>2</sup> Serum ferritin normally represents only a small fraction of the total iron in serum, but generally maintains a stable concentration that is proportional to the much larger pool of storage iron in the tissues. The serum level becomes abnormal before exhaustion of the mobilizable iron stores and before the onset of anemia. Following an acute blood loss, ferritin levels fall rapidly as the storage iron is mobilized for hemoglobin synthesis.

In the absence of anemia, no single test is adequate for testing iron deficiency. The clinical investigation of iron metabolism classically required the determination of serum iron, TIBC and saturation. These studies are valid indicators of plasma iron supply and demand, but are not adequate indicators of iron storage. Serum ferritin levels are usually equivalent to the stainable iron in the bone marrow. There is good correlation between low serum ferritin and absence of bone marrow stainable iron in 88% of cases. The other 12% with normal ferritin and absent marrow iron are in patients with hematopoietic malignancies or active liver disease. They still require bone marrow biopsy to evaluate hypoferrremic states despite normal serum ferritin levels.<sup>3</sup> The bone marrow examination for stainable iron is probably not needed when the serum iron and ferritin are both low.<sup>3</sup>

Serum ferritin concentrations increase in acute and chronic inflammations, some liver diseases such as hepatitis,

some malignancies (leukemias and lymphomas), and some anemias not due to iron deficiency, such as hemolytic and megaloblastic anemias. A normal serum ferritin level therefore cannot exclude iron deficiency in the presence of inflammation, liver disorder, or malignancy. Serum ferritin determination is helpful in the differential diagnosis of anemia due to iron deficiency (decreased) vs. chronic inflammation or debilitating diseases (elevated).

Serum ferritin is determined to: (1) detect iron deficiency, (2) determine response to oral iron treatment, (3) monitor iron status in chronic renal disease,<sup>4</sup> (4) detect iron overload, and (5) differentiate anemia of chronic disease vs. iron deficiency.

Serum ferritin may be measured by radioimmunoassay or enzyme immunoassay (EIA). Normal serum ferritin is 15 to 200 ng/ml, with a mean of 90 in males; 10 to 200 ng/ml with a mean of 50 in females. It is less than 10 ng/ml in iron deficiency and greater than 200 with increased iron stores. With iron overload, it is usually more than 1000 or even 3000 ng/ml. In hemochromatosis, the iron stores will not be increased in the early stages and a markedly elevated serum iron and transferrin saturation of over 70% may be the best indicators of this condition.

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## 1982 HMA MEETING

### Highlights, November 5, 1982 Meeting

- Dr. Albert Chun-Hoon reported that an advisory committee will handle hospital and medical society complaints to the state's Department of Commerce and Consumer Affairs. HMA president will appoint an ad hoc committee on nominations for the advisory committee and for the medical claims conciliation panels.

- The format for the 1983 Annual Meeting will be that of 1982 meeting: 4 days with plenary sessions of 1-2 hours, 4 hours each day. The 1983 Annual Meeting will be planned for Maui.

- Council voted to endorse the 1983 Health Fair, though it is too late for HMA to have a booth. A HMA presentation will be developed meanwhile for future health fairs.

- Bylaws need changing to reflect the House of Delegates' directive that nominations for HMA offices be held at the annual opening session of the House of Delegates. The speaker and vice-speaker will be *pro tem ex officio* members of the Constitution and Bylaws committee and should also attend every Council meeting *ex officio*.

- Emergency Medical Services are in the "black." A discrimination case is pending.

- HMA president was directed to contact the Auxiliary president regarding plans for a fund-raising project for AMA-ERF.

- A new commission/committee structure for 1983 was approved. Related committees are placed under one commission. Some commissions were renamed to better identify purpose. Proposed commissions and commissioners are: Leadership Services, Dr. Calvin Kam; Administrative Services, Dr. William Hindle; Peer Review, Dr. Alan Hawk; Membership Services, Dr. Charlotte Florine; Community & Professional Relations, Dr. George Bolian; Socio-Economics, Dr. Bernard Scherman; Public Health, Dr. James Lumeng; Legislation, Dr. George Goto; Internal Affairs, Dr. Russell Stodd.

- The wings and small ball on top of the staff of the HMA logo will be removed as they do not denote medicine or physicians. As in the AMA logo, a rough staff or walking stick should be used, since it is derived from Aesculapius, Greek god of medicine.

- The financial picture for A&T Printing, Inc., owned by HMA, has improved. A&T is to mail HMA members a price list and brochures of their services, including printing of office forms and stationery.

(A full copy of minutes is available at HMA and county medical society for perusal by any member.)

### SUMMARY OF HOUSE OF DELEGATES ACTIONS

The Hawaii Medical Association House of Delegates met on October 11 and 13, 1982, at the Hilton Hawaiian Village to consider annual reports of committees and commissions, reports of the leadership, and resolutions submitted by members. Three reference committees were appointed to hear comments on the reports. The reference committees presented their recommendations to the entire House of Delegates on Wednesday, October 13, 1982.

AMA President William Rial addressed the House on October 11. Members of the AMA Board of Trustees, Drs. Joseph Boyle, William Jirka, and John Coury, as well as Executive Vice President James Sammons, were also in attendance.

The meeting was called to order by President Ann B. Catts. Those present were Drs. Calvin Kam, Neal Winn, K.Y. Lum, William Hindle, Thomas Cahill, Ernest Bade, John Newman, Michael Savona, Kenneth Grant, Nadine Bruce, Walter W.Y. Chang, E. Lee Simmons, Henry Fong, Philip Hellreich, James Lumeng, Stephen Wallach, Arch Wigle, Peter Kim, Russell Stodd, Fred MacInnes, Herbert Chinn, William Iaconetti, George Mills, Harry L. Arnold Jr., William W.L. Dang, George Goto, Marion Hanlon, O.D. Pinkerton, Calvin C.J. Sia, Samuel Yee, Andrew Don, Sakae Uehara, Joseph Andrews, Ben Hur, Mark Wentworth, Minolu Cheng, Thomas Au, Carl Boyer, Doris Jasinski, Charles Judd, Melvyn Kaneshiro, John Kim, Carl Lehman, Yoshio Oda, Fred Reppun, Bernard Scherman, William Shiraki, Helen Sullivan, Richard Tesoro, Herbert Uemura, Thomas Whelan, Dan Yoshio-ka, Owen Kaneshiro, James McGuire, Dan Palmer, John Pearson, Antonio Tan, Maxwell Urata, Edmund Lum, Vern Williams, Trina Brodsky, Ed Pontius, and Gary Yatsushiro.

The following reports were adopted:

HAMPAC report with \$500 for educational fund.

TREASURER: A balanced budget for 1983 was adopted with income and expenses set at \$769,750. Alexander Grant & Co. were selected as the auditing firm for HMA, and HMA dues remain at \$435 per year.

LEGAL COUNSEL: Attorney V. Thomas Rice, HMA legal counsel, recommends two amendments to Hawaii Revised Statutes: (1) provision for immunity to peer review committees of medical specialty societies, and (2) restoration of language in the Rules of Evidence section of the law to permit *any* information acquired by a physician in attending a pa-

tient be privileged, not only that which was communicated to the physician.

EXECUTIVE DIRECTOR: Jonathan R. Won, HMA executive director, recommends that (1) the entire peer review system of the HMA be reviewed and developed into a more formal system, including integration with the component society systems, and that the duties of the peer review system be expanded to include assistance to the executive secretary of the Board of Medical Examiners in the recruitment of qualified physicians to serve on medical claim conciliation panels, (2) the HMA membership recruitment effort, and especially the membership retention effort, be put into a formal system that will virtually reach every physician in the state; (3) the legislative effort of the HMA be reviewed and put into an action plan that will assure both physicians and staff of the procedures and responsibilities in lobbying and testifying activities. (4) the HMA make guidelines for the development of non-dues sources of revenue and for the development of membership benefit programs to assure the most efficient and effective operation of the HMA; (4) that HMA continue to follow its policy of balanced budgeting.

HAWAII TUMOR REGISTRY: It was agreed that suitable space for the Hawaii Tumor Registry be acquired, as its present quarters are too large.

COMMISSION ON INTERNAL AFFAIRS: Minor amendments to the HMA bylaws were passed, to include the West Hawaii component medical society and increasing the number of members of the Nominating Committee to 9.

COMMISSION ON INTERPROFESSIONAL AND PUBLIC AFFAIRS: The Membership Benefits Committee will continue to explore benefits that would render economic savings to members and to remind members of the benefits available on a quarterly basis.

The Public Affairs Committee will continue to present awards on behalf of the HMA at the annual Science and Engineering Fair and the annual Medical Journalism Awards.

The Publications Committee proposed and recommendations were approved that: (1) Harry Arnold Jr. continue as editor of the HAWAII MEDICAL JOURNAL; (2) that Crossroads Press continue as publisher of the HAWAII MEDICAL JOURNAL; (3) that subscription rates remain the same for 1983; (4) that the HMA Directory of Physicians be sold to the public at \$25/copy; (5) that a 1983 roster-directory be published as the September 1983 issue of the HMJ; (6) that a summary of the House of Delegates actions be published in the HMJ in

HAWAII MEDICAL JOURNAL



lieu of the complete proceedings; and (7) that the 1983 budget be approved.

The Tel-Med Committee was discharged, in view of the withdrawal of HMA support to the Tel-Med program in 1982.

**COMMISSION ON LEGISLATION:** The legislative program for 1982 was reviewed and it was agreed that: (1) the committee continue its present format with Becky Kendro as full-time lobbyist for the HMA; (2) future concerns should include social welfare programs such as Medicare/Medicaid and the block grant programs, regulatory efforts over the practice of medicine, the problems caused by the increase in numbers of physicians, paramedical personnel, and others involved in the medical field.

The Medical Malpractice Law Committee recommended: (1) continued monitoring of the operation of the Patient's Compensation Fund, which provides excess professional liability insurance coverage via a state-operated fund; (2) work in conjunction with the Department of Commerce and Consumer Affairs to enact periodic payment legislation; (3) explore the feasibility of relocating the management and operation of the Patient's Compensation Fund to another department of government; (4) explore the feasibility of including DOs in the Patient's Compensation Fund provided they are subject to the same review process as MDs.

**COMMISSION ON MEDICAL EDUCATION:** The Health Care Costs Committee was directed to establish firm goals and objectives for 1983, to determine whether its functions are being met by other HMA committees, and report back to the House of Delegates in 1983.

The Alternative Health Care Committee was directed to draft a specific educational program for educating physicians and the community and a budget request if necessary, to be submitted to the next House of Delegates.

The Continuing Medical Education Committee will: (1) develop guidelines for surveys and approval of programs following the issuance of the ACCME guidelines; (2) consider the cost factor of various CME programs, closely scrutinizing those with high registration fees; (3) consider charging a higher fee for programs requiring greater evaluation; (4) continue to review the evaluation forms of the approved programs.

The Medical, Ethical, Moral, and Legal Concerns Committee will continue to monitor inquiries and use of the living will documents in our state and to educate the public and physicians about them, continue discussions regarding informed consent, continue to assist the community on ethical, moral, and legal concerns.

The Scientific Program Committee will follow the format used for the 1982 meet-

*Continued on page 72*

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ing for the subsequent meetings; i.e., plenary sessions during the mornings for 4 days.

**COMMISSION ON MEDICAL SERVICES:** The Insurance Committee will continue to explore insurance benefits for the Association and the feasibility of establishing a program for the Medicaid operation similar to the Redwood Foundation Program of California. Rather than have a freestanding negotiations committee, it was agreed that negotiations would be among the responsibilities of the HMA Executive Committee.

**COMMISSION ON PEER REVIEW:** The Peer Review Committee reviewed possible guidelines for due process for physicians against whom complaints are made, how HMA should deal with members who are indicted, etc. It was agreed that all relations with HMA members who are indicted shall continue, except that they shall not be on referral lists nor serve on peer review committees until the criminal matter is resolved; that applications for membership in HMA by physicians who are under indictment at the time of application be held in abeyance until the matter is resolved; and that applications for new services or benefits be handled according to strict guidelines established by the Peer Review Committee.

The Maternal and Perinatal Mortality Study Committee was reminded that any plans for educational programs or review of practice patterns should include the involvement of component medical societies.

**COMMISSION ON PUBLIC HEALTH:** The Chronic Illness Committee will be renamed Aging and Chronic Illness.

The House directed the HMA Disaster Committee to meet at least annually to ensure coordination of plans and functions of county disaster committees.

The School Health Committee will encourage the circulation of the School Health Manual to all physicians in the state.

The Sports Medicine Committee held 2 public clinics in 1982 and will communicate with the Neighbor Islands regarding the sponsorship of sports clinics there.

**AD HOC COMMITTEE ON HOUSE OF DELEGATES:** The Ad Hoc Committee recommended (1) formalizing of the certification process for seating of delegates and alternate delegates, (2) defining of terms to be used for common House of Delegates actions, (3) the use of a consent calendar listing those House of Delegates reports and resolutions on which there has been no discussion or action required. The committee also made recommendations regarding the 1981 resolutions referred for further action. These resolutions were adopted as follows:  
**RESOLUTION 9** resolved that a bylaws

change be initiated to wit: that a Speaker be an elected official of the HMA; and that a deputy Speaker be elected to assist the Speaker in organizing the work of the House of Delegates and to serve in the absence of the speaker and that the Speaker be an *ex-officio* member of the HMA Council without vote.

**RESOLUTION 10** resolved that a serious attempt be made by the Nominating Committee to provide choices in all elective offices of the organization.

**RESOLUTION 11** resolved that election of members of the Nominating Committee be carried out in the House of Delegates prior to the annual election of officers.

**A&T PRINTING CO.** A status report on the company operations will be presented at each Council meeting; the company will seek more suitable quarters; a detailed report and recommendation regarding retention of the company will be made to the Council by April 1983.

**AD HOC COMMITTEE ON BLOCK GRANTS** will continue for another year and actively participate in all advisory committees relating to health block grants.

**COMMUNITY RESEARCH BUREAU** is a 501(c) (3) organization whose board was instructed to investigate the possibility of establishing a program of solicitation of contributions for specific and general educational and research programs and that the HMA Council set a timetable and complete its work within a year, making its report to the next House of Delegates.

**BUILDING COMMITTEE** budget for 1983 was approved as submitted with the addition of a line item for capital improvements and repair/replacement contingencies.

**BUSINESS/MEDICINE COALITION** will continue and the coalition was requested to be certain to include representation of all component medical societies.

**HAWAII HEALTH INSTITUTE** has submitted a grant to the Robert Wood Johnson Foundation for a program of affordable health care and agreed to cooperate fully with the other participants of this *ad hoc* committee and to maintain HMA's position of leadership in the institute.

**HAWAII FOUNDATION FOR MEDICAL CARE** should continue its investigations into a private, voluntary peer review system for the state, to consider legislative action to provide funding for the development of an individual practice association to provide services to the Medicaid program. The HMA Council will be asked to consider what funding, if any, is to be provided to the HFMC.

#### RESOLUTIONS ADOPTED

**Resolution I—Re: Xelan Credit Union Membership.**

Resolved that the HMA acknowledges

the advantages of Xelan membership to our members, and

Resolved that HMA circulate to the membership information on Xelan and its credit union, and poll our members concerning their interest in HMA's obtaining Xelan membership as an Association, and

Resolved, that the HMA Council be authorized to obtain that membership if a sufficient number of our members (more than 250) respond favorably, with the understanding that the cost of that membership be shared by those HMA members who agree to join Xelan.

**Resolution 3—Re: Automatic Expulsion for Conviction of Felony**

Resolved that the component societies review and amend their by-laws to remove this provision and to include conviction of a felony along with the other listed causes for disciplinary action.

**Resolution 4—Re: Due Process**

Resolved, that the component societies review their by-laws with particular reference to disciplinary actions and procedures of peer review committees, boards of censors, boards of governors, and full membership as they relate to the AMA guidelines for due process, and be it further Resolved, that the several county societies amend their by-laws to come generally into compliance with the AMA guidelines. (It is not considered mandatory that physicians be present when complainants present their information, provided physicians be fully informed of the evidence or testimony given.)

**Resolution 5—Re: County Society Referrals to HMA for Peer Review**

Resolved, that each component society review its bylaws and amend them to include procedures for referring any charge or complaint against a member to HMA for peer review investigation and recommendation of disciplinary action if appropriate.

**Resolution 6—Re: The Medical Consequences of Nuclear War**

Resolved that all physicians and allied health workers in the State of Hawaii be informed and educated on the medical consequences of a nuclear war, and that the HMA Council review all educational material that is to be released under HMA auspices, and be it further

Resolved, that the HMA urge our leaders in government at county, state and national levels to prevail upon other leaders throughout the world to address the issue of a moratorium on any further manufacture, testing, stockpiling and deployment of nuclear weapons as soon as mutual verification can be worked out to the satisfaction of all nations, and, further, to urge that all nations agree never to use such weapons and eventually to eliminate them from the Earth, but until all nuclear weapons can be eliminated, any interim agreements should guarantee parity between the U.S. and

HAWAII MEDICAL JOURNAL



USSR in nuclear armaments.

Resolution 7—Re: District Health Officers

Resolved, that the Hawaii Medical Association strongly and urgently recommends that the positions of District Health Officers be maintained and that these positions be filled by physicians, and be it further Resolved, that a copy of this resolution be forwarded to the Governor of the State of Hawaii, to the Director of Health, and to the Republican and Independent Democratic candidates for the Office of Governor, and be it further

Resolved, that the position of Director of Health be filled by a physician.

#### RESOLUTIONS REFERRED:

Resolution 2 was referred to Peer Review Committee for study. This resolution deals with the question of case referrals of the Maternal/Perinatal Committee to the Peer Review Committee in those instances where patterns of care are questionable.

Resolution 8 was referred to the HMA Council to investigate the matter of appropriate standards for management and administration of county/state hospitals, to take appropriate action, and to report to the House of Delegates at its next meeting.

The following reports were filed: Hawaii County, West Hawaii Medical Society, Kauai County Medical Society, Honolulu County Medical Society, HMA President, HMA Secretary, Pension Committee, AMA Delegate, Auxiliary President, Editor-Hawaii Medical Journal, Cancer Commission, EMS (with deletion of budget request), Bureau of Research and Planning, and Commission on Health Services and Care.

## Thanks

The House of Delegates gave a round of thanks to President Ann Catts and Secretary K.Y. Lum, who are retiring from office.

#### NOMINATING COMMITTEE

The Nominating Committee presented the following slate of nominations:

President-elect

E. Lee Simmons  
Sakae Uehara

Secretary

Thomas Cahill (withdrew)  
Russell T. Stodd  
Arch Wigle

Alternate Delegate to AMA

William E. Iaconetti

Councillor from Kauai

Peter M. Kim

Councillors from Honolulu

Thomas Au  
Norberto Baysa  
Jeanette Chang  
Walter W.Y. Chang  
Percival Chee  
Edwin Dierdorff  
Nancy Edwards  
Bernard Fong

Allan Izumi

Owen Kaneshiro

Allan Kunimoto

Philip McNamee

Michael McCabe

Bal Raj Mehta

Kenneth Nakano

Ronald Peroff

George Shimonura

Richard Tesoro

Herbert Uemura

Neal Winn

Those elected were:

President-elect

Sakae Uehara

Secretary

Russell T. Stodd

Alternate Delegate to AMA

William E. Iaconetti

Councillor from Kauai

Peter M. Kim

Councillors from Honolulu

Thomas Au

Nancy Edwards

Herbert Uemura

Neal Winn

The members of the Nominating Committee for 1983 were elected as follows: Honolulu—Ann Catts, Herbert Chinn, Philip Hellreich, James Lumeng, Neal Winn; Hawaii—Arch Wigle; West Hawaii—Kenneth Grant; Kauai—Peter Kim; Maui—Russell Stodd.

#### HMA 1982 annual meeting awards

Medical Reporting Awards

Commercial Newspapers and Magazines—Webster Nolan (West Hawaii Today)

Television—Courtney Harrington and Terry Paul (Channel 2 News, KHON-TV)

Radio—Ronaale Whittington (Total Health)

Institutional Newspapers and Magazines—Maxine Sandison (Hawaii Health Messenger, State Department of Health)

A.H. Robins Awards (1982 Physician Award for Community Service)—Albert C.K. Chun-Hoon, M.D.

Sportsmen's Awards

Golf:

President's Trophy (Low Net)—Ichiro Nadamoto, M.D.

Robert Miyamoto Perpetual Trophy (Low Net)—Ichiro Nadamoto, M.D.

John Felix Perpetual Trophy (Low Gross)—Glenn Kokame, M.D.

George Mills Perpetual Trophy for Pharmaceutical Representatives (Low Net)—David Arakaki

Tennis:

Singles: Gene Doo, M.D.

Doubles: Gerard Dericks, M.D., and Worldster Lee, M.D.

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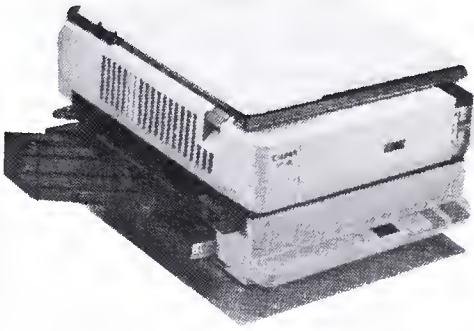
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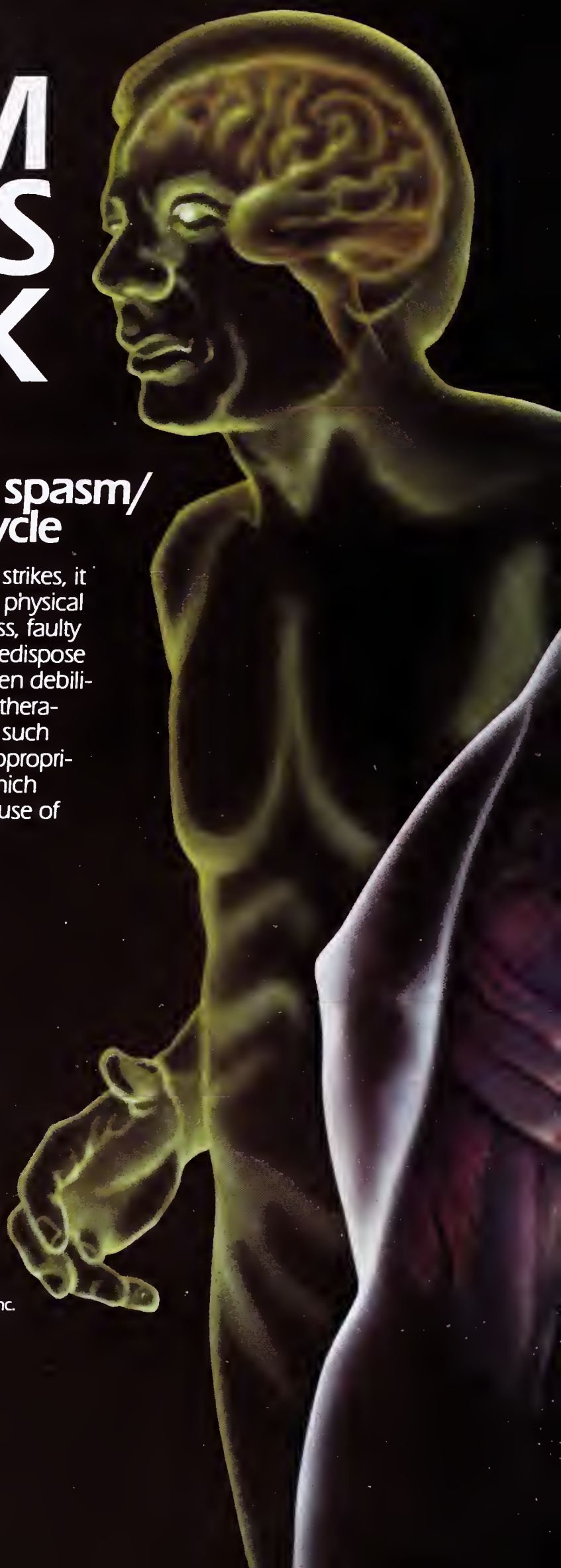


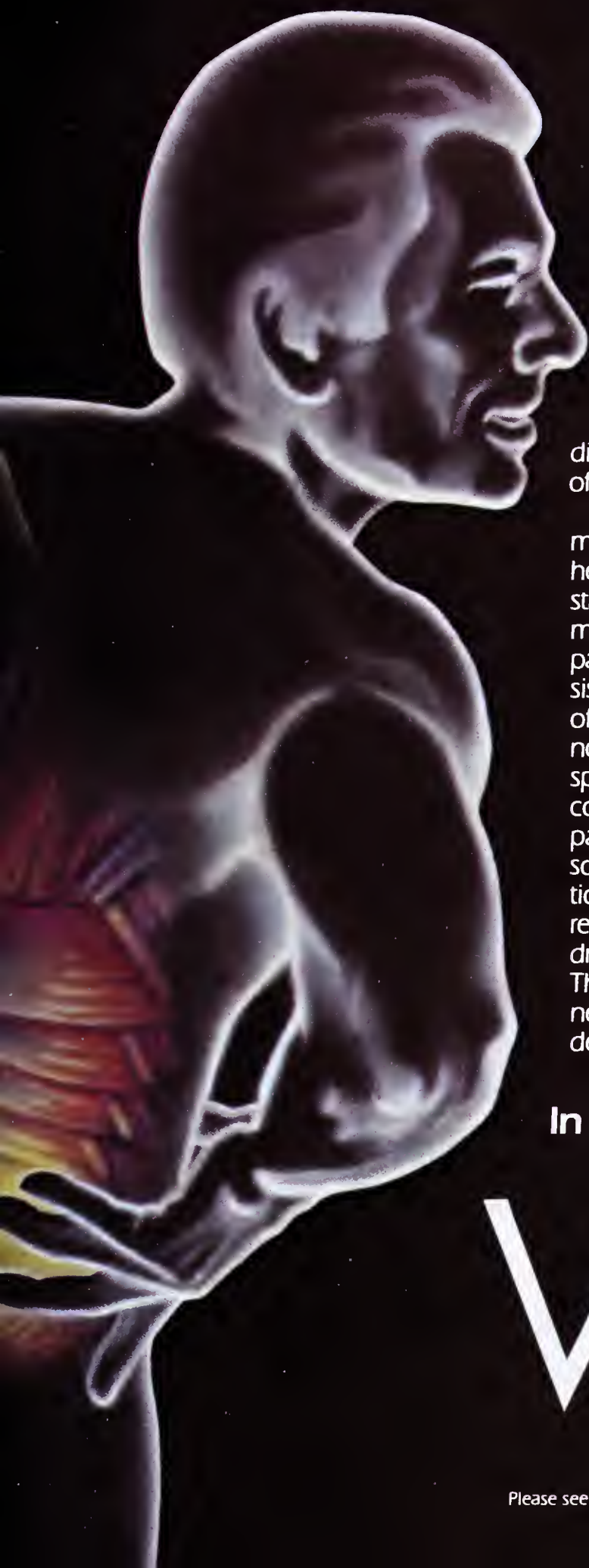
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The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anti-convulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anti-convulsants, consider carefully pharmacology of agents employed; drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. **Adults:** Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. **Geriatric or debilitated patients:** 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) **Children:** 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

**How Supplied:** For oral administration, Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100\* and 500.\* Prescription Paks of 50, available in trays of 10.\* Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25,† and in boxes containing 10 strips of 10.†

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**References:** 1. Rankin EA. *Contin Educ* 3(1):46-50, Jan 1975.  
2. When muscle spasm hobbles your patient. *Patient Care* 8(11):20-37, Jun 1, 1974.

# Hawaii MEDICAL JOURNAL

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HAWAII MEDICAL JOURNAL



## President's Message

### Workers' Compensation

Responsible care and peer review activities are important concerns of your HMA. This was demonstrated more than 10 years ago by your Workers' Compensation Committee in forming a medical review panel. Society was not ready to accept this concept then, but with escalating health care costs and difficulties determining disability, work-related injuries, and appropriateness of care, a medical review panel is needed. Your committee recently met with Dr. Faulkner Short, an orthopedic surgeon, to study the Oregon system with representatives of the insurance industry and Orlando Watanabe.

Considered was the setting up of panels of three specialists to see three or four cases in half-day sessions, with a leader to report the findings on each case. The panel would do the usual history, physical, and diagnosis, and would make suggestions for further care, return-to-work potential, and would do physical impairment ratings.

Industrial back problems would be addressed first, by specialists in orthopedics, neurosurgery, physical medicine, industrial medicine, osteopathy, and psychiatry. The HMA wants to know if members are willing to serve on these panels to help resolve work-related problems. It is hoped that there will be sufficient participation to form several panels to insure fair and responsible decisions.

### Malpractice Awards

The following is a summary of a Rand Corporation study of malpractice awards for 1974 and 1976. This is from the December 1982 issue of Medical Liability Advisory Service:

- A plaintiff is more likely to win an award if his injury is permanent rather than temporary, and an award is most likely if the injury is fatal;
- A plaintiff has a 50% higher chance of winning when he claims *res ipsa loquitur*;
- A plaintiff is 20% less likely to win if he charges misdiagnosis and 34% less likely if he alleges lack of informed consent;
- A plaintiff is almost twice as likely to win against multiple defendants as against a single defendant;
- A plaintiff does not have a significantly higher chance of winning in surgery-related cases than in others;
- The size of awards is strongly influenced by the severity of the injury;
- The higher the economic loss, the higher the likely award;
- The potential verdict for claims involving permanent total disability is roughly double that for claims involving death;
- Potential verdicts for permanent total disability increase roughly 2% for each year of life expectancy;
- Awards for minor injuries, whether temporary or permanent, are not systematically related to severity, but rise and later fall with the age of the claimant, peaking in his late thirties. The investigators conclude from this that minor awards are more influenced by current wage loss than by medical costs, pain and suffering, or any other factor.

Calvin C.M. Kam, M.D.  
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Hawaii Medical Association

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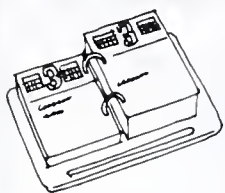
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## Continuing Medical Education

### CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Asterisked programs also are accredited for AAFP prescribed credit.

#### LOCAL ACCREDITED PROGRAMS ONGOING

##### American Cancer Society, Hawaii Division

1. Telephone Task Force w/G.N. Wilcox Memorial Hospital, First Thursday, 12:45 p.m. and Fourth Tues. 12:30 p.m. w/ Maui Mem. Hosp. Held on Oahu at Am. Cancer Society main conf. room, 200 N. Vineyard, Honolulu.
2. Windward Oncology Conference w/Castle Memorial Hospital, Second and Fourth Tuesday, 12:30 p.m.

##### John A. Burns School of Medicine

1. Dept. of Medicine
  - \*A. Case Conferences, Second and Fourth Tuesdays, 12:30-1:30 p.m., Queen's University Tower, Room 618.
  - \*B. Grand Rounds, First and Third Tuesdays, 12:30-1:30 p.m., Queen's University Tower, Room 618.
  - C. Endocrinology Grand Rounds, Second Thursday, 5:30-6:30 p.m., Queen's University Tower, Room 506.
  - D. UH-Queen's Conference, Fridays, 8:00-9:00 a.m., Queen's Medical Center, Mabel Smythe Auditorium.
  - E. Cardiology Grand Rounds, Third Tuesdays, 5:30-6:30 p.m., Queen's University Tower, Room 508.
  - F. Infectious Disease Grand Rounds, Second and Fourth Tuesdays, 5:00-6:00 p.m., Queen's Nalani 1 Conference Room.
  - G. Dermatology Grand Rounds, Second Wednesday, 7:30-9:30 a.m., Queen's Medical Center, Queen Emma Clinic.
  - H. Pulmonary Grand Rounds, Fourth Monday, 12:30-1:30 p.m., Queen's Medical Center, Kamehameha Lounge.
  - I. Nuclear Medicine Grand Rounds, Third Wednesday, 5:00-6:30 p.m., Straub Hospital, Doctors' Dining Room.
  - J. Medical-Surgical GI Grand Rounds, Third Friday, 12:45-1:45 p.m., Kuakini Hospital, PB4 Classroom.
  - K. Hematology Grand Rounds, Fourth Monday, 12:30-1:30 p.m., Queen's University Tower, Room 721.
  - L. Nephrology Conference, First Monday, 1:00-2:00 p.m., St. Francis Hospital, Sullivan IV Classroom.
  - M. G.I. Journal Club, First Thursday, 5:00-6:00 p.m., Straub Clinic and Hospital, Fourth Floor Conference Room.
2. Dept. of Obstetrics and Gynecology
  - \*A. Grand Rounds, Wednesdays, 7:30-8:30 a.m., Kapiolani-Children's Medical Center, Second Floor Auditorium.
3. Division of Orthopedics
  - A. Fracture Conference, Mondays, 5:00-6:00 p.m., Queen's University Tower, Room 618.
  - B. Hand/Biomechanics/Foot Conference, Mondays, 4:00-5:00 p.m., Queen's University Tower, Room 618.
4. Dept. of Pediatrics
  - A. Grand Rounds, Thursdays, 8:00-9:00 a.m., Kapiolani-Children's Medical Center, Second Floor Auditorium.
  - B. Pediatric Monday Noon Conference, 12:45-1:45 p.m., Kapiolani-Children's Medical Center, Second Floor Auditorium.
  - C. Pediatric Infectious Disease Conference, Thursdays, 12:30-1:30 p.m., Kapiolani-Children's Medical Center, Conference Room B.
  - D. Perinatal Grand Rounds, Fridays, 8:15-9:15 p.m., Kapiolani-Children's Medical Center, Conference Room B.
5. Dept. of Psychiatry
  - A. Grand Rounds, Fridays, 8:00-9:30 a.m., Queen's University Tower, Room 618.
6. Dept. of Surgery
  - A. Grand Rounds, First, Second, and Third Saturdays, 7:30-9:00 a.m., rotating hospitals.

- B. Statistical M and M, last Saturday, 7:30-9:00 a.m., rotating hospitals.
- C. Journal Club, First and Third Tuesdays, 6:00-8:00 p.m., Queen's University Tower, Room 620.
- D. Medical-Surgical GI Rounds, Third Friday, 12:45-1:45 p.m., Kuakini Medical Center, PB4 Classroom.
- E. Pediatric Surgical Grand Rounds, First Friday, 12:45-1:45 p.m., Kapiolani-Children's Medical Center, Conf. Rm. 5.
- F. Basic Science Lecture, Wednesdays, 7:15-8:15 a.m., Queen's University Tower, Room 618.

##### \* 7. Dept. of Family Practice

- A. Conference, Fourth Wednesday, 1:00-2:00 p.m., Kapiolani-Children's Medical Center, Second Floor Executive Dining Room.
8. HI Oncology Group, one Monday a month, 12:30-1:30 p.m., The Cancer Center, 1236 Lauhala St., 4th Floor Conference Room.

##### Hawaii Ophthalmological Society

1. Monthly dinner meeting, Third Thursday of each month. Contact: O.D. Pinkerton, M.D., at (808) 536-6996.

##### Hawaii Thoracic Society

1. Case presentations & current research in pul. med. with U. of H. Sinclair Chest Club, Third or Fourth Wednesdays, each month, 6:00-7:30 p.m. Contact: Rosemary Respicio, B.S.N., at (808) 537-5966.

##### Hickam Clinic

1. Professional Staff Seminar, Thursday, 3:00 p.m. Contact: Tom Davidson, M.D. (808) 499-9907 or 449-9908.

##### Hilo Hospital

1. Tumor Conference, First Friday, 12:30 p.m.
2. X-ray Conference, Second Friday, 12:30 p.m.
3. Clinical Pharmacology, Third Friday, 12:30 p.m.
4. Pathology Conference, Fourth Friday, 12:30 p.m.

##### Kaiser Hospital

1. Medicine Grand Rounds, Every Tuesday, 8:00 a.m. Pac. Aud. 1 hr. Cat. 1.
2. Tumor Board, Every Tuesday, 12:00. Pac. Aud. 1 hr. Cat. 1.
3. OB/Ped. Perinatal Mortality Conference, Last Tuesday, each month. 8:00 a.m. 1 hr. Cat. 1.
4. Surg. Grand Rounds, Every Friday, 8:00 a.m. Pac. Aud. 1 hr. Cat. 1.
5. Saturday Morning Educational Conference, Every Saturday, 7:30 a.m. Pac. Aud. 1 hr. Cat. 1. (Contact CME Dept.-Kaiser for further information)
6. OB-Path Conference, First Monday of each month, 8:00 a.m., 1 hr.

##### Kapiolani-Children's Medical Center

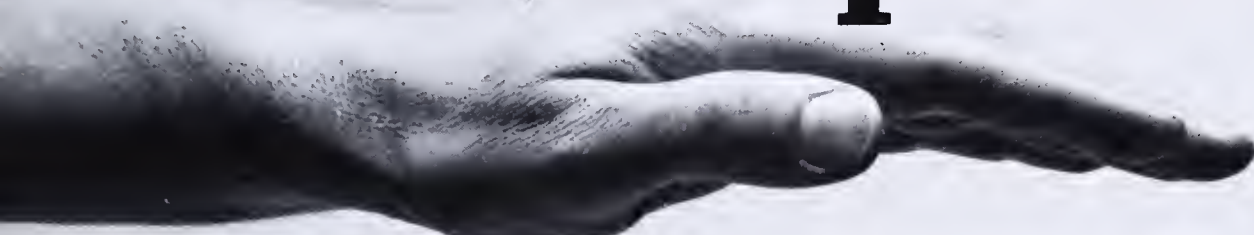
1. Pediatric Grand Rounds, Every Thursday, 8:00-9:00 a.m., Aud.
2. Pediatric Conference, Every Monday, 12:45-1:45 p.m., 2nd Floor Aud.
3. Neonatal Grand Rounds, Every Friday, 8:00-9:00 a.m., Conference Room B.
4. Pediatric Infectious Disease Conference, Every Thursday, 12:30-1:30 p.m., 3rd Floor Conf. Rm.
5. Ob-Gyn Conference, Every Tuesday, 1:00-2:00 p.m., Aud. First—Didactic Presentation  
Second—Perinatal-Neonatal Topics  
Third—Obstetrics Topics  
Fourth—Gyn Topics
6. Tumor Board, Oncology Conference, First and Third Friday, 1:00-2:00 p.m., Aud.

##### Kuakini Medical Center

1. Visiting Professor Program (for further info contact CME Dept. at 547-9226 as these programs subject to change).
2. Nuclear Medicine Conference, Third Monday, 1:00 p.m., Makai Conference Room.
3. Dept. of Ophthalmology, First Tuesday, 12:30 p.m., Private Dining Room.
4. Dept. of Medicine, Fourth Tuesday, 1:00 p.m., Hale Pulama Mau Auditorium
5. G.I. Conference, Second Wednesday, 12:30 p.m., Makai Conference Room.
6. Oncology Conference, Every Thursday, 7:30 a.m., PB-4 Conference Room.
7. Cardiology Conference, First Thursday, 12:30 p.m., Makai Conference Room.
8. Nephrology Conference, Second Thursday, 8:00 a.m., Makai Conference Room.
9. Pulmonary Conference, Second Thursday, 1:00 p.m., Makai Conference Room.
10. Hematology Conference, Third Thursday, 12:30 p.m., Makai Conference Room.
11. Surgical Conference, First and Second Friday, 12:45 p.m., PB-4 Conference Room.
12. Surgical M&M Conference, Fourth Friday, 12:45 p.m., PB-4 Conference Room.

*Continued on page 84*

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### Maui Memorial Hospital

1. Thursday Conference, 7:00-8:00 a.m., Staff Dining Room.  
First—Dept. of Medicine  
Second—Dept. of Surgery  
Third—Dept. of OB/GYN  
Fourth—Dept. of Pediatrics  
Fifth—Elective
2. Tumor Board, Every Monday, 12:15-1:15 p.m.—Tumor Conference Telephone Task Force—Third Tuesday, 12:15-1:15 p.m.
3. Dept. of Emergency Medicine, Third Monday, 7:00-8:00 a.m.
4. Diagnostic Radiology, Fourth Tuesday, 12:00-1:00 p.m.

### The Queen's Medical Center

1. ENT Conferences, First and Second Fridays, 7:30 a.m., Small Dining Room.
2. Medical Conferences, Every Friday, 8:00 a.m., Mabel Smyth Auditorium.
3. OB/GYN Conferences, Every Monday, 1:00 p.m., Kam Auditorium.
4. Ophthalmology Conference, Fourth Tuesday, 5:00 p.m., Queen Emma Eye Clinic.
5. Orthopedic Conferences, Every Wednesday, 7:00 a.m., Kam Auditorium.
6. Pathology Conferences, Every Wednesday, 7:00 a.m., Nalani I Conference Room.
7. Pediatric Grand Rounds, Fourth Thursday, 12:30 p.m., Harkness Board Room.
8. Surgical Trauma Conference, Second Tuesday, 4:30 p.m., Kam Auditorium.
9. Basic Science Lectures, Every Wednesday, 7:15 a.m., Queen's University Tower, Room 618.

### St. Francis Hospital

1. SFH-UH Tumor Conference, Every Monday, 7:30 a.m., Sullivan-4 Classroom.
2. EENT Meeting, First Tuesday, 7:00 a.m., Sullivan-4 Classroom.
3. SFH-UH Hematology Conference, Third Thursday, 12:30 p.m., Sullivan-4 Classroom.
4. SFH-UH Surgical Grand Rounds, First, Second & Third Fridays, 7:30 a.m., Sullivan-4 Classroom.
5. Visiting Professor Programs (for further info call CME office at St. Francis).

### Straub Clinic & Hospital

1. Patient Care Conference, Second Tuesday, 5:00 p.m., Doctors' Dining Room.
2. Medical Morbidity and Mortality Conference, Third Wednesday, 8:00 a.m., Doctors' Dining Room.
3. Neuropathology Conference, Fourth Saturday, 7:45 a.m., Doctors' Dining Room, Morgue.
4. Straub Professional Seminar, Second Tuesday, 5:00-6:30 p.m., Credit Union Meeting Room (2nd Floor, Credit Union Bldg.)
5. Surgical Mortality and Morbidity Conference, Fourth Thursday, 7:00-8:00 a.m., Doctors' Dining Room.
6. Cardiac Surgery Conference, Third Tuesday, 4:30-5:30 p.m., Doctors' Dining Room.
7. Dept. of Anesthesiology, Second Tuesday, 7:00-8:00 p.m., Doctors' Dining Room.
8. Community Peripheral Vascular Conference, Fourth Thursday, 5:00-6:30 p.m., Doctors' Dining Room.
9. Urology Inservice, Every other Third Friday, from 8:00-9:00 a.m., Doctors' Dining Room.
10. OB-GYN Pathology, Every Fourth Monday, 12:30-1:30 p.m., Administration Conference Room (ACR).
11. Friday Noon Conference, Every Friday, 12:30-1:30 p.m., Doctors' Dining Room.

\*Note: All conferences subject to change. Monthly calendar available upon request.

### Wahiawa General Hospital

1. Noon Seminars, Every Tuesday

### Wilcox Hospital (Lihue)

1. General Medical Staff Meeting, Quarterly in January, April, July & October.
2. Clinical Review Meeting, Every Monday at Noon, except the last Monday of the month.
3. Tumor Conference, First Thursday.

### Miscellaneous

HMA Maternal and Perinatal Mortality Study Committee, First Monday, 5:30 p.m. 320 Ward Ave., Suite 200.  
Cat. 1 on hr. for hr. basis.  
Hawaii Melanoma Tumor Board, 3rd Friday of month, 12:30-1:30 p.m., Cancer Center of Hawaii, 1236 Lauhala St., Honolulu, Hawaii Room 501. Contact: Bonnie Brannon 548-8777.

## SPECIAL EVENTS

April 9-15 1983	California Society of Plastic Surgeons, Inc. At: Hyatt Regency Maui. Contact: A.H. Ellenberg, M.D., 2550 Samaritan Drive, San Jose, Calif. 95124	May 7-12, 1983	American College of Legal Medicine. At: Kona Surf Hotel, Big Island, Hawaii. Contact: B. Hanna, Exec. Sec., 213 W. Institute Place, Suite 412, Chicago, IL 60610.
April 10-16, 1983	California Society of Anesthesiologists. At: Sheraton Royal Waikoloa. Contact: Norman R. Catron, Exec. Director, 100 S. Ellsworth Avenue, Suite 806, San Mateo, CA 94401.	June 13-15, 1983	University of California/San Francisco "Health Care Professionals in Management". At: Westin Ilikai, Honolulu, HI Contact: Harry Aiu, c/o Travel Planners, Inc. 2222 Kalakaua Avenue, Honolulu, HI 96815.
April 10-18, 1983	Society of Nuclear Medicine-Western Region. At: Waiohai/Hawaiian Regent. Contact: Jean Parker, Administrator, P.O. Box 40279, San Francisco, CA 94140.	June 18-25, 1983	USC School of Medicine-Ophthalmology. At: Mauna Kea Beach Resort, Big Island, Hawaii. Contact: Beverly Johnson, USC School of Medicine, 2025 Zonal Avenue, Los Angeles, CA 90033.
April 11-12, 1983	Blood Bank of Hawaii Quarterly Seminar. Contact: Judith Bertsch, 2043 Dillingham Blvd., Honolulu, Hawaii, 845-9966.	August 13-19, 1983	USC School of Medicine-Post Graduate Refresher Course. At: Sheraton Waikiki/Royal Hawaiian, Honolulu, Hawaii. Contact: Beverly Johnson, USC School of Medicine, 2025 Zonal Avenue, Los Angeles, CA 90033.
April 16-23, 1983	USC School of Medicine, Diagnostic & Therapeutic Skills. At: Mauna Kea Beach Resort, Big Island, Hawaii. Contact: Beverly Johnson, USC School of Medicine, 2025 Zonal Avenue, Los Angeles, CA 90033.	Sept. 24-30, 1983	American Urological Association-New York Section. At: Sheraton Royal Waikoloa, Big Island, Hawaii. Contact: Arthur Tessler, M.D., 530 First Avenue, New York, NY 10016.
April 24, 1983	HMA/Lederle Symposium on Pain Control. Ilikai Hotel. Contact: CME Dept., HMA, 320 Ward Ave., Suite 200, Honolulu, HI 96814 (808) 536-7702.	Oct. 8-10, 1983	Hawaii Medical Association Convention. At: Hotel Inter-Continental Maui, Hawaii. Contact: Irene Wong, 320 Ward Avenue, Suite 200, Honolulu, HI 96814.
May 7-8, 1983	Association for Practitioners in Infection Control (APIC): Pacific Perspectives. Hilton Hawaiian Village Hotel. Contact: APIC, 23341 N Milwaukee Ave., Half Day, Illinois 60069 (312) 634-1403.	Nov. 18-19, 1983	Diagnostic Imaging for the Clinician. At: Honolulu Academy of Arts Theatre, Honolulu, Hawaii. Contact: Rose Voulgaropoulos, 888 S. King Street, Honolulu, HI (808) 523-2311, Ext. 8152.

A complete list of Continuing Medical Education programs in Hawaii will be run semiannually in the HAWAII MEDICAL JOURNAL. In intervening issues, Special Events only will appear in this column. Information regarding on-going programs and Special Events is available through the individual institutions or through the Hawaii Medical Association's CME department.

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## In Memoriam

### Mike Brodsky and the Medical School

In a way that no longer seems surprising, the early supporters (from the medical profession) of a school of medicine in Hawaii were not a "fringe" group. They were mature men and women whose personal and professional styles were conservative and low key. They did not work at variance with each other, but neither were they ever obviously identifiable as a "group," and certainly not to each other. Of this dozen or so doctors, Mike Brodsky was almost offhand at first; he did not make influential statements in the deliberations of the Hawaii Medical Association nor at hospital staff meetings. Instead, he offered the nascent medical school the most unimaginable gift—space.

Mike was the director of Leahi Hospital, which was still a private voluntary organization, although by that time, its major operating costs and the newer parts of its facilities were all derived from state funds. Older parts of the building complex were still structurally sound, but they were designed for long open wards in which a single nurse would have 20 or 30 stable patients under her eye.

By mid-1960s, such common sense arrangements were "non-conforming," and either standing idle or utilized at a low level. Other, even more extensive, non-ward space was similarly underutilized, mainly in consequence of the dramatic reduction in the tuberculosis patient census.

With the agreement of the Leahi board, Mike Brodsky made some of this space available to Dean Windsor Cutting as laboratory and office space for the new school. The fact that the laboratories were fashioned from unlikely spaces by Rube Goldberg methods did not daunt Mike or Windsor, perhaps because they were of the generation that believed that laboratories should look like basement workshops.

It is interesting to recall that Mike, who never spoke of theories of management and planning, knew exactly how to get things done in Hawaii. At no time did Mike produce analyses of used and unused space and never frightened anyone with a comprehensive plan for conversion to medical education and research. Instead the space became available piecemeal, in a apparently offhand way; between times confidence was tested at every step.

Unfortunately, some of the new medical school faculty per-

ceived Mike's shrewd, stepwise approach as foot-dragging, partly because they had their eyes fixed on what they had not yet received rather than on that which they had already received. Mike was not given to explanations, the matter was never "cleared up," and Mike was left with a very human feeling of being underappreciated. He did not retaliate in any petty fashion, and the space conversion process continued until the state took over Leahi operations from the Leahi board and formally transferred the hospital to university management. Mike became a regular faculty member, retaining his clinical and administrative duties at Leahi and adding the responsibilities of Professor of Medicine, with particular emphasis on his expertise in tuberculosis.

It should be noted that Mike was probably not altogether "flying blind" in his supportive housing of the new medical school, since he enjoyed a golf-playing acquaintance with Governor John A. Burns. A few pungent monosyllables from the Governor probably indicated to Mike that the medical school was "on," but we can be sure that Mike was never given a detailed blueprint. In fact, he told a story about his single disastrous effort to lobby for his Leahi budget with the Governor in the course of a golf game: "He gave me a cold look and took my head right off."

As it turned out, the construction of the biomedical sciences building on the Manoa Campus and the clear-cut policy decision to develop a 4-year school with clinical teaching in community hospitals eclipsed the original idea of Leahi as a venerable nucleus of the new school. Nevertheless, even now when the operations are conducted by the state health department, valuable School of Medicine research programs continue in well-renovated space at Leahi that Mike had originally perceived as surplus (and unsuited) to the hospital's clinical mission. Mike's cooperativeness provided more than surge space for a new medical school; he provided a place for the heart of the medical school, and few men have the luck or wisdom to do something so vital. Mike Brodsky did it as if it were no big deal, but those of us who dreamed the first dreams will never forget him.

Terence A. Rogers, Ph.D.  
Dean, John A. Burns School of Medicine  
University of Hawaii

### HMA Council Highlights, February 4, 1983 Meeting

at the Hotel Intercontinental on Maui from October 8-10, 1983. House of Delegates will meet on Saturday, October 8 and Monday, October 10, at 1:30 p.m.

- The Building Committee will look at refinancing the agreement of sale on the HMA building; 3 years are left on the present agreement.

- Hawaii Tumor Registry move from its present location in the HMA building to the Cancer Center on Lauhala Street was approved.

- A resolution which asks the county/state hospital system to assure fairness and due process in their contracts with hospital-based physicians was adopted.

- The legislative reception held Monday, January 24, at the HMA offices for senators, representatives, and physician members was a really great success this year. HMA also presented each legislator on opening day with a crystal canister

filled with Chinese fortune cookies, containing a variety of Rx's for good health and fortune for this year's legislative session.

- Referral was made to the Legislative and Medicaid/Medicare Committees for further study on the co-payment insurance issue.

- A request was referred to the Communicable Disease Committee to develop a specific plan for implementation of the hepatitis B vaccine.

- The Hawaii Foundation for Medical Care met with the Council for a special session on Saturday, February 5, for a presentation on TEFRA '82 and its impact on hospitals and physicians relating to Medicare and Medicaid. The impact will be substantial and far-reaching to hospitals, hospital-based physicians, and

*Continued on page 88*



- An amended budget for 1983 was adopted. There were four major changes: a slight increase in membership; deletion of anticipated income from A&T Printers, Inc.; increase of 125% for anticipated legal expense; and to hold in abeyance return of loans to members from the Capital Fund Advance Plan for 1983.

- HMA's Annual Meeting will be held

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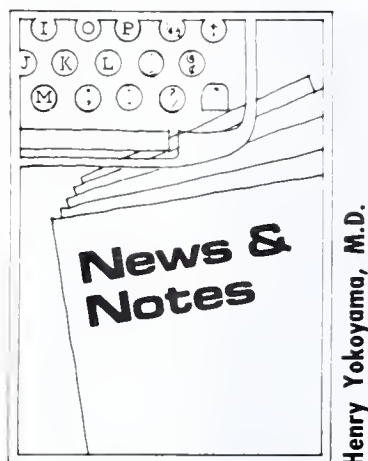
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physicians in private practice. TEFRA also mandates that PROs (Peer Review Organizations) be established. The Foundation was commissioned by Council to develop a cost estimate for either HMA or the Foundation to become the PRO in Hawaii.

- The Cancer Management Outlines



## M.D.s speak up

Pediatrician **Jeremy Lam**, when queried on "Parents' Hotline" why children cry excessively, listed the following: "The usual reasons are gas, indigestion, hunger, or wet diapers . . . Other possibilities: fear, sudden movement, loud noises, overstimulation, lack of body contact, unfamiliar smells, boredom, change in diet, tension from self or others, straining to defecate, need to suck, or a lash in the eye." Then Jeremy finally admitted: "Some crying seems to be inevitable and will happen for no clear reason." (Jeremy must be a frustrated parent, too . . .)

**Cyrus W. Loo**, dermatologist, acupuncturist, and man of many talents says, "With each passing year, there continues to be thousands of grateful individuals who by their testimonials support the effectiveness of acupuncture treatments . . . In spite of this, there still remain many skeptics . . . There needs to be a change in our American way of thinking and that is to begin to recognize subjective testimonials as evidence of fact. The Chinese and other oriental cultures have long accepted this. Why can't we?"

**Timothy McLeod**, a Kailua surgeon, has had to attend numerous injuries from dog bites simply because the owners let unleashed dogs run freely on the beaches, especially in Kailua and Lanikai. Timothy points out that this is a flagrant violation of the City and County ordinance banning dogs on public beaches and the ordinance requiring dogs to be on a leash whenever off private property.

Compassionate soul, **Walter Strode** wrote in defense of Paul Bizzell, school teacher at Waldorf School who was sentenced to 5 years by Judge Huddy. "It seems grossly unjust that admitted rapists and criminals of all kinds are allowed

have been completed and will be sent to the printers. All of the sections except that on head and neck, which is from the national guidelines, were based on Hawaii experience and done in Hawaii. The Cancer Committee will submit a recommendation to the Council on whether the head and neck section should be included in the final printing.

- The GSTSG-Colo/rectal study received a grant for funding to the end of

plea bargaining and probation when by contrast someone such as this highly intelligent and genuinely remorseful teacher is punished so severely. I strongly doubt that Bizzell represents any kind of threat to our children. In this instance, not only does he suffer unduly, but so do our schools and our community in general."

**George Goto** rebutted irresponsible statements on DES. A Linda Martin wrote that DES taken by pregnant women may cause a serious form of cancer in the female offspring and is suspected of contributing to the high rate of testicular cancer among the male progeny. "She states that as many as 27,000 victims of DES exposure are living here in this state and that DES-exposed mothers have a higher rate of breast cancer. . . Her statements appear to be designed to create panic among men and women who are taking or have taken DES for any reason and should be answered." George points out that in-utero DES-exposed females may develop vaginal cancer, but the risk is no more than 1.4 per 1,000 and possibly as few as 1.4 in 10,000 . . . As of this date, there is no evidence that in-utero DES-exposed males have an increased incidence of cancer of the genitourinary tract . . . Although one study reported a slightly higher frequency of breast cancer in DES-exposed mothers than in non-exposed mothers, the difference was not statistically significant . . . Stating that 27,000 in-utero exposed individuals live in Hawaii appears to be overstating the actual incidence in Hawaii . . . To my knowledge, only a small number of physicians in Hawaii ever used DES in pregnant women and no physician in Hawaii is now using DES in pregnant women . . ."

**John B. Dillon** of Koloa, Hawaii, objected to the Advertiser special edition article, "The Big Island as a refuge," which proposes the transportation of several hundred thousand people from Oahu to Hawaii and Kauai in the event of a nuclear bomb threat . . . Says John, his safe haven threatened, "It is beyond my comprehension how such an idea could have evolved or be taken seriously. To transport so many people in a short time is physically impossible. There are no provisions for such a population on the Island or Islands. The emotional impact of such a dislocation would be devastating. . . The Hawaiian Islands are indefen-

January 1984.

• HMA staff member, **Leslie Ajifu**, Director of Financial Affairs, retiring the end of February, 1983, was honored for his 34 years of dedicated service to HMA and HCMS. Dr. Kam presented Mr. Ajifu a lei and koa bowl on behalf of the members.

A full copy of the minutes is available at the HMA office and offices of component societies for perusal by any member.

sible from atomic attack. The only reason the Islands would be bombed or Oahu specifically, is because of military presence . . ."

**Laurence Kolonel** is one of 14 scientists in the U.S. who spent two years reviewing worldwide research on cancer and its relation to diet and nutrition for the National Academy of Sciences. The evidence points to a relationship between fat intake and cancer, so the Hawaiians and Caucasians who consume the most fat have cause for concern . . . Studies at the Cancer Center have revealed a strong correlation between breast, uterus and prostate cancer and the consumption of fat and animal protein . . . Filipinos who consume a large amount of carbohydrates and little fat have the lowest risk for cancer in Hawaii.

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# Ethnic Differentials in Health in Hawaii

Michael Haas,\* Honolulu

Income levels lie at the heart of the quality of life in modern societies. Education, low infant mortality, and life expectancy are appropriately considered to be indicators of the "quality of life" in nations and among ethnic groups within nations, and all three are more available to societies and groups with higher levels of income.

For decades there have been income differentials across the ethnic groups in Hawaii (Table 1). One major basis for income inequality has been hypothesized to be an occupational and mobility structure in which each new immigrant group for a time has been employed primarily in unskilled labor jobs on the plantations; a second hypothesis, which has been completely refuted by statistical data for Hawaii, is that cultural differences account for differential income levels across ethnic groups.

As agriculture has receded in importance in relation to other sectors of the economy in Hawaii, we might expect income equality to increase. Instead, there has been a widening gap between the incomes of Filipinos, on the one hand, and the more affluent Oriental (Chinese, Japanese, Korean) groups, with Hawaiians virtually unchanged in recent decades in relation to the top groups (Table 2).

One set of correlates of the widening income gap may be found in the health status of ethnic groups in Hawaii: the ethnic groups which cannot afford the best medical treatment have poorer health. The total profile is, of course, more complex, but death rates show Hawaiians to be particularly likely to die at earlier ages and Filipinos to die from tuberculosis more often than the other principal ethnic groups (Table 3). The Hawaiians do not receive the kind of medical attention that they need, as we shall see below, whereas Filipinos are more likely to be exposed to tuberculosis because large numbers come from the home country, which has not yet attained the affluence to eradicate all serious contagious diseases. Among persons suffering from acute conditions, Caucasians (Europeans) and Hawaiians lead the ethnic groups in encountering emergency conditions that are likely to require some hospitalization (Table 4). In view of a higher death rate among younger Hawaiians, we infer that Hawaiians die in cases of emergency at a higher rate than do Caucasians. Chronic conditions are least prevalent among Filipinos and Hawaiians (Table 5), which might seem to contradict the thesis presented herein until we recognize that the diagnosis of non-emergency con-

ditions will be most frequent among those who can afford repeat trips to a physician.

The state Department of Health is responsible for coping with realities in the health status of all of Hawaii's people. Under Title VI of the Civil Rights Act of 1964, the state Department of Health, as a recipient of federal funds, is prohibited from servicing some ethnic groups at the expense of others. Specifi-

cally, a recipient of federal funds is required to survey how it services various ethnic groups; if some groups are serviced more than others, as determined in the survey, the recipient agency is next required to find out why this is so. If the explanation for failing to service some ethnic groups at the same rate as others is valid, such as the case in which the prevalence of a disease is ethnically linked, then the explanation for differential servicing of ethnics contracting that disease is acceptable.

Thus, we should expect Filipinos to be treated in State of Hawaii hospitals for tuberculosis at a higher rate than other ethnic groups. If, however, we find that Japanese have a rate in contracting diabetes twice the rate for Filipinos (Table 5), yet the Department of Health maintains a diagnostic screening program which services Japanese five times as often as Filipinos (Table 6), then we

TABLE 1.  
Median Income of Males, by Ethnic Group, in Hawaii, 1949-1969  
(incomes below median parenthesized)

Ethnic Group	1949	1959	1969
Caucasian	\$2856	(\$3649)	\$8699
Chinese	2964	5096	8000
Filipino	( 1995)	( 3071)	( 5252)
Hawaiian	2369	NA†	( 6835)
Japanese	2427	4302	( 7839)
Median	2340	3717	8055

Source: A. Lind, *Hawaii's People* (1967), p. 100; 1970 U.S. Census

† Not available.

TABLE 2.  
Relative Income of Ethnic Groups in Hawaii, 1949-1969  
(figures in % of group with highest income in each year; below-median incomes parenthesized)

Ethnic Group	1949	1959	1969
Caucasian	96	(72)	100
Chinese	100	100	92
Filipino	( 67)	( 60)	( 60)
Hawaiian	80	NA	( 79)
Japanese	82	84	( 90)

Source: Table 1

TABLE 3.  
Health Status of Ethnic Groups in Hawaii, 1970, 1979  
(groups with above-average death rates parenthesized)

Health Variable	Ethnic Group					Total
	Caucasian	Chinese	Filipino	Hawaiian	Japanese	
Infant deaths per 1000 live births, 1979	10.0	8.6 )	7.3	(14.0 )	8.4	10.2
Under 1 day	3.4	(4.3 )	2.2	( 5.1 )	3.2	4.2
Under 1 week	( 5.9 )	5.7	4.7	( 7.4 )	4.8	5.8
Under 28 days	( 7.3 )	5.7	5.1	( 8.7 )	6.0	7.0
28 days to 11 months	3.2	2.9	(5.1 )	( 5.4 )	2.4	3.2
Tuberculosis cases per 1000 residents, 1979	( 0.6 )	(0.9 )	(1.6 )	0.1	0.2	0.4
Relative mortality (proportion of total possible years lived), 1970						
Ages 0-4	.981	.986	( .979)	( .978)	.985	.981
Ages 5-14	.999	( .998)	( .998)	( .998)	.999	.999
Ages 15-54	.979	.981	( .967)	( .951)	.981	.976
Ages 55-74	( .833)	.887	( .829)	( .766)	.912	.860

Source: Hawaii Department of Health, *Statistical Report 1979*, pp. 37, 95; Gardner, "Ethnic Differentials in Mortality in Hawaii, 1920-1970," Table 4.

\* Department of Political Science, University of Hawaii at Manoa

suspect something is awry, such as the possibility that the program is not operated in Filipino languages.

Public agencies are asked to avoid widening the gap between the health status of ethnic groups by eliminating discriminatory administrative procedures and by undertaking new actions calculated to broaden the delivery of services provided. One might ask whether the diabetes disparity is paralleled by disparities in servicing alcoholics, drug abusers, Hawaii State Hospital patients, and mental health patients (Table 6).

Prompted by an official complaint, the federal Department of Health, Education, and Welfare (HEW) undertook an investigation of the Hawaii State Department of Health for possible racial discrimination in 1976. The original complaint brought to HEW's attention statistics on Hawaii State Hospital patients for the year 1973 (Table 6). The statistics indicated that the percentages of persons serviced at Hawaii State Hospital were far different from the percentages of each respective racial group in the 1973 population (which is close to total population breakdowns for 1979 in Table 6).

HEW asked the Department of Health to justify the disparity between races serviced and races potentially eligible to be serviced, but no justification based on documentary evidence was forthcoming from the health department. Accordingly, on December 15, 1976, HEW notified the Department of Health that it was "in non-compliance with Title VI of the Civil Rights Act of 1964 and its implementing regulation." In *Mangrobang v. Yuen* (1977) the Legal Aid Society of Hawaii sued the state Department of Health along similar lines. Each year since 1976 the federal agency has monitored efforts of the Department of Health to bring itself into compliance. In 1979, the court-appointed committee to supervise compliance efforts resulting from *Mangrobang v. Yuen* concluded that insufficient progress had been occurring.

In early 1980, accordingly, Legal Aid Society of Honolulu filed a motion in Federal District Court to have a court-appointed magistrate run the Department of Health until such time as civil rights implementation would be in conformity with the standards set forth in the Civil Rights Act of 1964. Judge Samuel P. King ruled that the Department of Health should follow the specific recommendations of the court-appointed committee for implementation, deferring the issue of a magistrate until evidence could be presented that the health department had failed to implement the recommendations in question.

Differentials in health profiles of ethnic groups in Hawaii remain, and little evidence exists to show that public health agencies are making efforts designed to assist groups in need to obtain greater ac-

*Continued on page 92*

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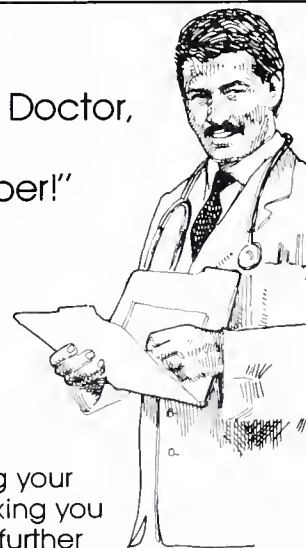
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cess to public programs that might serve to reduce ethnic differentials.

Robert W. Gardner claims just the opposite: citing data from 1910 to 1970, he argues that the gap between ethnic groups is narrowing rather than widening in Hawaii.<sup>4</sup> In order to understand this paradox, a re-analysis of the data presented by Gardner is necessary.

### Measuring Ethnic Differentials

In any effort to measure social groups it is important to employ statistical indicators that will validly reflect differences and similarities. In Gardner's article, the following measures are employed:

1—Ranges in life expectancy at birth across ethnic groups,

2—Rank orders in average annual change in life expectancy across ethnic groups,

3—Differences between proportions of total possible years lived in cohorts across the ethnic groups (relative mortality),

4—Changes in relative mortality across ethnic group cohorts.

One may question the validity of all these indicators. In the field of public health, advances in medicine during the 20th century have facilitated increases in the quality of health care for all ethnic groups, regardless of income level, and life expectancies have increased for nearly all ethnic groups as a result. To be a valid measure of ethnic differentials, therefore, we must have an indicator that can focus more specifically on whether some ethnic groups benefit from rising health standards to a greater or lesser degree, relative to one another.

In the field of race relations, it has become customary to construct indicators that relate differences between ethnic groups on a ratio or percentage scale. As in Table 2, we may express the gap between ethnic groups as the ratio of one group to the top group; to simplify, the ratio may be expressed as a percentage. Thus, we may use percentage gaps at one point to compare with the situation at another point.

In 1950, for example, Filipino males had a median income of \$1,915; this was 75% of the median income of the top group (\$2,553 for Chinese). For a widening gap to exist, the 75% figure would have to decline; with a narrowing gap, the 75% figure would increase. In 1960, as noted in Table 2, Filipinos declined to 60% of the top ethnic group; the gap for Filipinos widened between 1950 and 1960. Using this same method of comparison, therefore, we can re-analyze the data presented by Gardner to see whether, as claimed, there has been a "definite narrowing of the differences among the groups."<sup>5</sup>

### Re-analysis of Ethnic Mortality Data

Proceeding table by table, we should

TABLE 4.  
Acute Conditions Among Ethnic Groups in Hawaii, 1979  
(per 100 persons; groups with above-average rates parenthesized)

Condition	Ethnic Group					Total
	Caucasian	Chinese	Filipino	Hawaiian	Japanese	
Infective Parasitic Diseases	( 23.5)	14.0	5.8	( 16.5)	5.9	14.1
Upper Respiratory Conditions	88.0	85.6	(101.9)	92.1	80.3	93.7
Influenza	( 53.7)	36.2	27.7	10.0	19.0	39.4
Other Respiratory Conditions	( 7.1)	—	( 9.8)	( 5.9)	1.6	5.7
Digestive Conditions	3.7	( 5.4)	2.3	( 4.0)	( 4.3)	3.7
Injuries	( 43.8)	18.4	16.2	20.7	22.4	27.8
Others	( 38.4)	23.3	13.7	21.6	17.7	24.8
Total	(258.1)	167.6	167.7	(210.6)	156.4	209.2

Source: Hawaii Department of Health, *Statistical Report 1979*, pp. 66, 67.

TABLE 5.  
Chronic Conditions Among Ethnic Groups in Hawaii, 1979  
(per 1000 persons; groups with above-average rates parenthesized)

Condition	Ethnic Group					Total
	Caucasian	Chinese	Filipino	Hawaiian	Japanese	
Heart Condition	( 23.4)	( 31.7)	15.2	15.3	( 27.5)	20.9
Back/Spine Impairment	( 48.4)	( 54.4)	14.4	27.5	( 35.1)	34.6
Hypertension (no Heart Disease)	54.8	( 76.1)	63.2	52.4	(106.7)	66.8
Arthritis/Rheumatism	( 38.6)	( 47.1)	20.1	12.2	( 30.2)	26.2
Hearing Impairment	( 35.5)	17.8	10.9	19.7	( 35.4)	26.1
Asthma (including Hay-fever)	33.9	( 44.1)	36.5	( 50.9)	24.4	36.5
Diabetes	19.1	16.5	18.1	15.6	( 37.1)	22.1
Mental & Nervous Condition	( 12.3)	( 12.1)	7.1	6.9	( 11.6)	9.6
Visual Impairment	( 11.7)	3.7	( 11.9)	( 10.9)	( 11.8)	10.5
Malignant Neoplasms	( 9.2)	1.7	.9	5.6	5.8	6.1
Skin Conditions	( 27.6)	22.7	( 24.4)	15.7	21.5	23.9
Sinusitis	( 39.1)	11.5	8.7	10.9	15.4	20.1
Hayfever (without Asthma)	( 73.3)	( 63.6)	18.4	34.9	( 64.3)	54.4
Stomach Ulcer	( 9.8)	( 8.5)	6.8	6.7	7.1	8.3
Bronchitis/Emphysema	( 14.5)	4.5	8.6	( 10.1)	4.5	9.2
Benign and Unspecified Neoplasms	( 8.9)	3.3	3.1	6.8	5.7	6.8
Hemorrhoids	( 20.9)	3.4	7.3	6.3	( 12.8)	12.3
Thyroid/Goiter	5.2	( 10.4)	4.6	2.5	( 7.7)	5.2
Varicose Veins	( 7.3)	( 7.3)	4.2	1.7	3.8	4.2
Gout	8.1	( 19.6)	( 17.5)	9.4	( 14.9)	11.4
Total	(501.6)	(460.0)	303.1	(632.7)	(483.5)	415.1

Source: Hawaii Department of Health, *Statistical Report 1979*, pp. 60, 63.

note that Gardner begins in his first table with estimates of life expectancy at birth. The range between the lowest and highest group in 1910 was about 25 years. By 1970, the range dropped to about 10 years, as we might expect from the rising level of medical care in Hawaii as a whole. But, if we look at the figures decade by decade, we discover that the decrease in ranges is not uniform (Table 7).

In particular, life expectancy ranges increase from 1950 to 1960, and male life expectancy ranges increase across the ethnic groups between 1960 and 1970. Thus, Gardner's claim of a narrowing gap between ethnic groups holds in 13 out of 18 cases, with 4 of the exceptions in the 6 cases of the 2 most recent decades, the

Continued on page 94

TABLE 6.  
Persons Served at Hawaii Department of Health Facilities  
(groups with above-average servicing parenthesized)

Facility	Ethnic Group					Total*
	Caucasian	Chinese	Filipino	Hawaiian	Japanese	
Diabetes Screenings, 1979	21.0	3.9	10.3	7.8	(50.8)	100.0
Alcoholism Patients, 1979	(73.4)	—	1.1	9.4	4.5	100.0
Drug Abuse Patients, 1979	24.9	2.1	4.3	(42.1)	6.8	100.0
Hawaii State Hospital Patients, 1973	(42.1)	1.8	7.3	16.1	11.7	100.0
Mental Health Patients, 1979	(35.7)	2.5	9.6	(21.6)	11.3	100.0
Hawaii Population, 1979	25.7	4.4	10.9	19.9	24.8	100.0

\* Totals include ethnic groups other than the five presented in the table.

Sources: Hawaii Department of Health, *Statistical Report 1979*, pp. 134, 177, 180; Hawaii Association for Asian and Pacific Peoples, *A Shared Beginning 1974*, p. 73.

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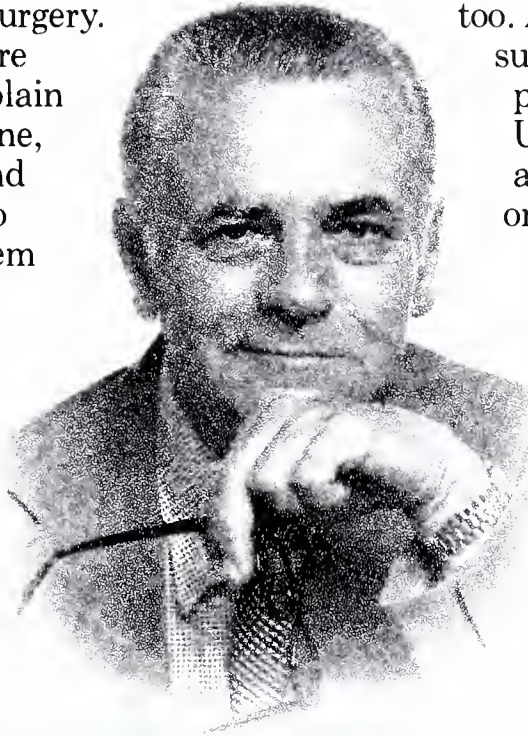
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period identical to that in which Filipinos experienced a widening gap in income levels (Table 2).

But let us also look at relative life expectancy percentages (Table 8). Caucasians, we can see, have been at the 90% level or better in relation to the ethnic group with the longest life expectancy in each decade, as have Chinese. Japanese had somewhat lower life expectancies in the early part of the century, but they rose to the 96-97% level in 1930 and have had the highest life expectancies since 1940.

Filipinos, meanwhile, increased in each decade up to 1950, but have been largely declining relative to Japanese ever since. Hawaiians increased up to 1950, dropped somewhat in relative position in 1960, increased somewhat in 1970, while remaining below Filipinos in nearly every decade since 1930. In 48 of the 87 cases in Table 8 where comparisons are possible, the ethnic groups narrow their gap from the ethnic group with the longest life expectancy; in 12 cases, there is no change from one decade to another; in 27 cases, the ethnic groups widen their gap from the top in a subsequent decade. When we look at specific ethnic groups, we see that Filipinos and Hawaiians have not uniformly derived as much benefit from medical advances since 1950 in terms of life expectancy as the more affluent races (Caucasians, Chinese, Japanese).

Summarizing information used as the basis for Table 9, Gardner states as follows: "Without exception, the following is true: the lower that life expectancy was in 1920, the faster the rate of change for

TABLE 8.  
Estimates of Life Expectancy at Birth of Ethnic Groups in Hawaii by Sex, 1920-1970:  
Attainments Relative to Ethnic Groups with Highest Life Expectancy in  
Each Decade by Sex (percentage of top group, with decreases over time parenthesized)

Year	Sex	Caucasian	Chinese	Filipino	Hawaiian	Japanese
1910	Male	92.5	100.0	NA*	55.0	90.3
	Female	92.1	100.0	NA	49.6	72.0
	Both	93.9	100.0	NA	53.7	87.1
1920	Male	100.0	( 98.0)	59.6	65.3	93.2
	Female	100.0	( 95.2)	48.5	57.0	86.5
	Both	100.0	( 96.0)	57.8	61.4	89.8
1930	Male	100.0	( 96.5)	78.9	70.3	97.2
	Female	100.0	97.4	75.8	66.4	96.1
	Both	100.0	( 95.5)	79.9	68.8	96.0
1940	Male	( 93.9)	97.9	95.2	77.9	100.0
	Female	( 99.6)	( 95.8)	87.5	76.0	100.0
	Both	( 96.2)	96.4	93.3	77.6	100.0
1950	Male	( 93.4)	( 97.2)	97.6	86.2	100.0
	Female	( 99.3)	( 95.2)	93.2	86.0	100.0
	Both	( 96.0)	( 96.2)	96.1	86.3	100.0
1960	Male	95.1	97.6	(96.7)	(85.5)	100.0
	Female	( 98.2)	98.5	(93.0)	86.4	100.0
	Both	96.3	97.7	(94.8)	(86.0)	100.0
1970	Male	( 93.4)	98.8	(92.7)	85.9	100.0
	Female	( 96.3)	( 98.3)	95.7	88.6	100.0
	Both	( 94.7)	98.4	(92.9)	87.3	100.0

Source: Gardner, "Ethnic Differentials in Mortality in Hawaii, 1920-1970," Table 1.  
\* Not available.

the next 50 years." Yet, if we re-examine Gardner's data, we see that his assertion holds only when we compare 1920 with 1970, where there is a perfect-1.00 rank correlation coefficient. Looking at rankings within each decade, we find a different pattern. Of the cases under analysis (5 ethnic groups compared over 5 specific decades), we note that the generalization holds in only 13 cases (Table 9). Filipinos, the ethnic group with the lowest life expectancy in 1920, had the lowest annual changes in life expectancy in 1950-60 and 1960-70. When we com-

pare percentage gaps, we discover as well that Filipino gains up to 1940 account entirely for the 1920-70 rate (Table 10). Indeed, in the last decade (1960-70) the average annual change for Filipinos was only 8% of the average annual change for the top group (Hawaiians). Meanwhile, Hawaiians' gains are uneven across the decades, increasing in the 1920-50 period, dropping in the 1950s, then topping other ethnic group gains in the 1960s. Japanese, a group which rose most spectacularly up to 1940, narrowing the gap in annual change in the 1920s and 1930s, declined in the 1940s, rose in the 1950s, and declined somewhat in the 1960s in its rate of increase in life expectancies relative to the top. Chinese, the top group in 1910, rose in increased life expectancies in each decade up to 1960, then were in second position in the 1960s. Caucasians, finally, decreased before World War II, then increased up to 1960, whence their average annual change was slightly above that of Filipinos.

But, if life expectancy is negatively correlated with rate of change in life expectancy, why should we restrict our comparisons to 1920 data? If Gardner's hypothesis is true, then the rate of change for ethnic groups in the period 1930-40 would be negatively related to the life expectancy of 1930, not 1920, and so forth for the other decades. Table 11 presents an analysis that is more specific to each decade. As the data show, Gardner's hypothesis is consistent with 9 cases, but inconsistent in 16 cases. Thus, we must rewrite Gardner's assertion, quoted above, as follows: the lower the life expectancy in 1920, the faster the rate of change in 9 cases and the lower the rate of change in 16 cases. So much for the concept of "mortality transition" as a factor alleged

TABLE 7.  
Estimates of Life Expectancy at Birth: Range Across Five Principal Ethnic Groups in  
Hawaii by Sex, 1910-1970 (ranges that are higher than corresponding figures for  
the previous decade are parenthesized)

Year	Sex	Ethnic Group with Highest Life Expectancy	Ethnic Group with Lowest Life Expectancy*	Range
1910	Male	Chinese	Hawaiian	24.73
	Female	Chinese	Hawaiian	26.07
	Both	Chinese	Hawaiian	26.08
1920	Male	Caucasian	Filipino	22.22
	Female	Caucasian	Filipino	(30.92)
	Both	Caucasian	Filipino	24.07
1930	Male	Caucasian	Hawaiian	17.86
	Female	Caucasian	Hawaiian	22.11
	Both	Caucasian	Hawaiian	19.47
1940	Male	Japanese	Hawaiian	13.11
	Female	Japanese	Hawaiian	16.97
	Both	Japanese	Hawaiian	15.11
1950	Male	Japanese	Hawaiian	9.79
	Female	Japanese	Hawaiian	10.44
	Both	Japanese	Hawaiian	9.93
1960	Male	Japanese	Hawaiian	(10.64)
	Female	Japanese	Hawaiian	(10.53)
	Both	Japanese	Hawaiian	(10.61)
1970	Male	Japanese	Hawaiian	(10.66)
	Female	Japanese	Hawaiian	9.02
	Both	Japanese	Hawaiian	9.84

Source: Gardner, "Ethnic Differentials in Mortality in Hawaii, 1920-1970," Table 1.  
\* Data for Filipinos are not available for 1910.

to account for ethnic patterns of life expectancy.<sup>7</sup>

Gardner next compares the proportions of total possible years lived by various age cohorts, referring to an indicator of "relative mortality" used by S.L.N. Rao.<sup>8</sup> But the longer life expectancy for Filipino males aged 55 to 74 in 1920, compared to all other ethnic groups, is clearly an anomaly to the notion that eth-

which various ethnic groups have particular problems. Indeed, Rao indicates that there is a widening gap between white and non-whites in the U.S.A., consistent with data of Hawaii presented herein.

When we compute relative gaps, we find that Gardner is correct as regards infant and childhood mortality (those aged 0-4 and 5-14) and younger adults (those

TABLE 9.  
Average Annual Change in Life Expectancy in Hawaii, 1920-1970:  
Rankings of Ethnic Groups for Each Time Period and for Life Expectancy in 1920  
(cases where changes in life expectancy do not correspond to initial life expectancy parenthesized)

Ethnic Group	Life Expectancy 1920		Average Annual Changes in Life Expectancy				
	1920-30	1930-40	1940-50	1950-60	1960-70	1920-70	
Caucasian	1	(4)	5	5	(2)	(4)	5
Chinese	2	(5)	4	4	(1)	(2)	4
Filipino	5	1	1	(2)	(5)	(5)	1
Hawaiian	4	2	2	(1)	(4)	(1)	2
Japanese	3	3	3	3	3	3	3

Source: Gardner, "Ethnic Differentials in Mortality in Hawaii, 1920-1970," Table 2.

nic differentials have narrowed, and should prompt us to question the validity of a measure that assigns a value opposite to that of life expectancy data. Rao, the prominent user of data on "relative mortality" to whom Gardner makes reference, clearly uses the measure, not as an indicator of mortality, health status, or quality of life, but rather as a diagnostic statistic for determining periods of life in

aged 15-54), for absolute and relative gaps have consistently narrowed for all ethnic groups and both sexes (Table 12). As regards older adults (those aged 55-74), the decline of Filipino males is dramatic, though there is a small drop for Caucasian males. For all other cases, the ethnic gap narrows over the 1920-70 period. But in view of the data in Table 9,

Continued on page 98

TABLE 10.  
Average Annual Change in Life Expectancy of Ethnic Groups in Hawaii, 1920-1970:  
Attainments Relative to Ethnic Group Changing Most Rapidly in Each Decade  
(percentage of top group)

Ethnic Group	Life Expectancy 1920		Average Annual Changes in Life Expectancy				
	1920-30	1930-40	1940-50	1950-60	1960-70	1920-70	
Caucasian	100.0	32.0	19.2	45.6	77.5	16.0	41.0
Chinese	96.0	29.0	42.3	46.6	100.0	92.0	55.1
Filipino	57.8	100.0	100.0	66.0	47.5	8.0	100.0
Hawaiian	61.4	51.5	72.3	100.0	57.5	100.0	83.3
Japanese	89.8	46.7	58.5	49.5	75.0	72.0	66.7

Source: Gardner, "Ethnic Differentials in Mortality in Hawaii, 1920-1970," Table 2.

TABLE 11.  
Life Expectancy Rankings and Rankings in Rates of Change in Life Expectancy for Subsequent Decades by Ethnic Groups in Hawaii, 1920-1970  
(cases where changes in life expectancy do not correspond to initial life expectancy parenthesized)

Ethnic Group	Life Expectancy 1920		Change in Life Expectancy, 1920-30		Change in Life Expectancy 1930-40	
	1920-30	1930-40	1930-40	1940-50	1940-50	1950-60
Caucasian	1	(4)	1	5	3	
Chinese	2	(5)	3	(4)	2	
Filipino	5	1	4	(1)	4	
Hawaiian	4	2	5	(2)	5	
Japanese	3	3	2	(3)	1	
Ethnic Group	Change in Life Expectancy 1940-50		Change in Life Expectancy 1950-60		Change in Life Expectancy 1960-70	
	1940-50	1950-60	1950-60	1960-70	1960-70	
Caucasian	(5)	4	2	3	(4)	
Chinese	4	2	(1)	2	(2)	
Filipino	2	3	(5)	4	(5)	
Hawaiian	1	5	(4)	5	1	
Japanese	(3)	1	(3)	1	(3)	

Source: Gardner, "Ethnic Differentials in Mortality in Hawaii, 1920-1970," Table 1-2.

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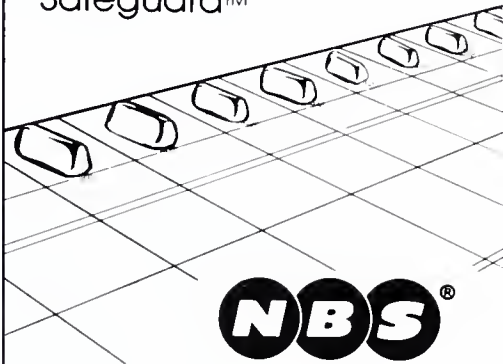
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**References:** 1. Shaw S, Lieber CS: Nutrition and alcoholism, chap. 40, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME. Philadelphia, Lea & Febiger, 1980, pp. 1220, 1237. 2. Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, op. cit., p. 781. 3. Shils ME, Randall HT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, op. cit., pp. 1084, 1089, 1114. 4. Dixon RE: *Ann Intern Med* 89 (Part 2): 749-753, Nov 1978. 5. Committee on Dietary Allowances, National Research Council: Recommended Dietary Allowances, ed 9. Washington, National Academy of Sciences, 1980, p. 13.



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we should expect that a decade-by-decade comparison would wash out the aggregate changes observed in Table 12.

In the final part of Gardner's analysis, 1920 data are subtracted from 1970 data; he once again seeks to claim that the ethnic groups farthest behind caught up the fastest. Indeed, 44 of the 60 cases conform exactly to Gardner's thesis, and 2 more could be added because of tied rankings (Table 13). But we are again without data for intervening decades for an indicator that has questionable validity.

### Conclusion

What consensus exists on the question of ethnic differentials in regard to mortality in Hawaii? There is agreement that the general status of health has improved for all ethnic groups during the 20th century. Filipinos and Hawaiians, farthest behind in the early part of the century, are still farthest behind, however. If we measure simple differences between ranges, we notice a narrowing of mortality across ethnic groups up to 1950, but since then the trend has not continued. In relative terms, the gap between Filipinos and Hawaiians, on the one hand, and Caucasians, Chinese, and Japanese, on the other hand, has not narrowed, but instead has widened (Filipinos) or widened and then narrowed (Hawaiians). Secondly, there is no consistent relationship between lower life expectancy in 1920 and rates of change in mortality in the decades up to 1970, though the rate of change was lowest for Filipinos and highest for Hawaiians in the 1960s, the most recent decade for which full data are available. Using an indicator of "relative mortality," for which validity is a problem, a narrowing of the gap between races is evident when we compare 1920 with 1970, no matter how we analyze the data; but without decade-by-decade data, it is possible that these results are largely artifacts of aggregation as they were in the analysis of absolute mortality, and we will have to suspend our judgment accordingly until these data are presented.

Using data for which a thorough analysis is possible, therefore, there is evidence of a widening gap between more affluent (Caucasian, Chinese, Japanese) and less affluent (Filipino, Hawaiian) ethnic groups in regard to rates of mortality in Hawaii. This gap coincides with a widening gap in income during the era since 1950. Indeed, compared to the rest of the industrialized countries of the world, the United States has declined in life expectancy since 1950. As William Ryan indicates, the principal explanation is that non-whites have failed to advance as rapidly in health status in the U.S.A., and this is because increased medical costs have placed major improvements in health care beyond the financial capabilities of the less affluent ethnic groups.<sup>9</sup>

TABLE 12.

Relative Mortality by Cohorts, Sex, and Ethnicity in Hawaii, 1920-1970:  
Attainments Relative to Ethnic Group/Sex Cohort with Highest Relative Mortality  
(percentages of top group, with decreases over time parenthesized)

#### 1) 1920

Ethnic Group	Males				Females				Both Sexes			
	0-4	5-14	15-54	55-74	0-4	5-14	15-54	55-74	0-4	5-14	15-54	55-74
Caucasian	100.0	100.0	100.0	90.1	99.6	100.0	100.0	98.3	100.0	100.0	100.0	95.9
Chinese	98.7	99.6	99.9	91.7	100.0	99.9	96.1	97.6	99.7	99.7	98.1	94.3
Filipino	65.7	99.1	93.2	100.0	69.0	98.7	80.8	77.0	67.5	98.8	90.5	100.0
Hawaiian	87.5	98.4	82.6	73.5	87.1	98.1	74.7	71.5	87.6	98.2	78.6	74.9
Japanese	94.6	99.5	99.7	93.7	95.2	99.4	92.8	100.0	95.2	99.4	96.4	97.3

#### 2) 1970

Ethnic Group	Males				Females				Both Sexes			
	0-4	5-14	15-54	55-74	0-4	5-14	15-54	55-74	0-4	5-14	15-54	55-74
Caucasian	(99.5)	100.0	(99.8)	(88.5)	99.7	100.0	(99.6)	(94.4)	(99.5)	100.0	(99.8)	(91.3)
Chinese	100.0	100.0	100.0	96.6	100.0	99.9	99.7	97.8	100.0	99.9	100.0	97.3
Filipino	99.2	100.0	97.9	(91.2)	99.5	100.0	98.9	96.4	99.3	99.9	98.6	(90.9)
Hawaiian	99.2	100.0	95.7	82.5	99.3	99.9	97.9	85.2	99.2	99.9	96.9	84.0
Japanese	99.9	100.0	99.2	100.0	99.9	100.0	100.0	100.0	99.9	100.0	100.0	100.0

Source: Gardner, "Ethnic Differentials in Mortality in Hawaii, 1920-1970," Table 4.

TABLE 13.

Changes in Relative Mortality by Cohort, Sex, and Ethnicity in Hawaii, 1920-1970:  
Rankings of Relative Mortality in 1920 and of Changes  
Between 1920 and 1970 by Ethnic Groups  
(cases where changes in relative mortality do not correspond  
to initial relative mortality parenthesized)

Ethnic Group	Males		Females		Total	
	Relative Mortality, 1920	Change in Relative Mortality 1920-1970	Relative Mortality 1920	Change in Relative Mortality 1920-1970	Relative Mortality 1920	Change in Relative Mortality 1920-1970
Caucasian	1	5	2	4	1	5
Chinese	2	4	1	5	2	4
Filipino	5	1	5	1	5	1
Hawaiian	4	2	4	2	4	2
Japanese	3	3	3	3	3	3
<b>2) Ages 5-14</b>						
Caucasian	1	5	1	(4-5)	1	5
Chinese	2	4	2	(4-5)	2	4
Filipino	4	2	4	2	4	2
Hawaiian	5	1	5	1	5	1
Japanese	3	3	3	3	3	3
<b>3) Ages 15-54</b>						
Caucasian	1	5	1	5	1	5
Chinese	2	(3)	2	4	2	4
Filipino	5	(2)	4	2	4	2
Hawaiian	4	(1)	5	1	5	1
Japanese	3	(4)	3	3	3	3
<b>4) Ages 55-74</b>						
Caucasian	4	(4)	2	(5)	3	(4)
Chinese	3	3	3	(4)	4	(3)
Filipino	1	5	4	(1)	1	5
Hawaiian	5	1	5	(2)	5	1
Japanese	2	(2)	1	(3)	2	(2)

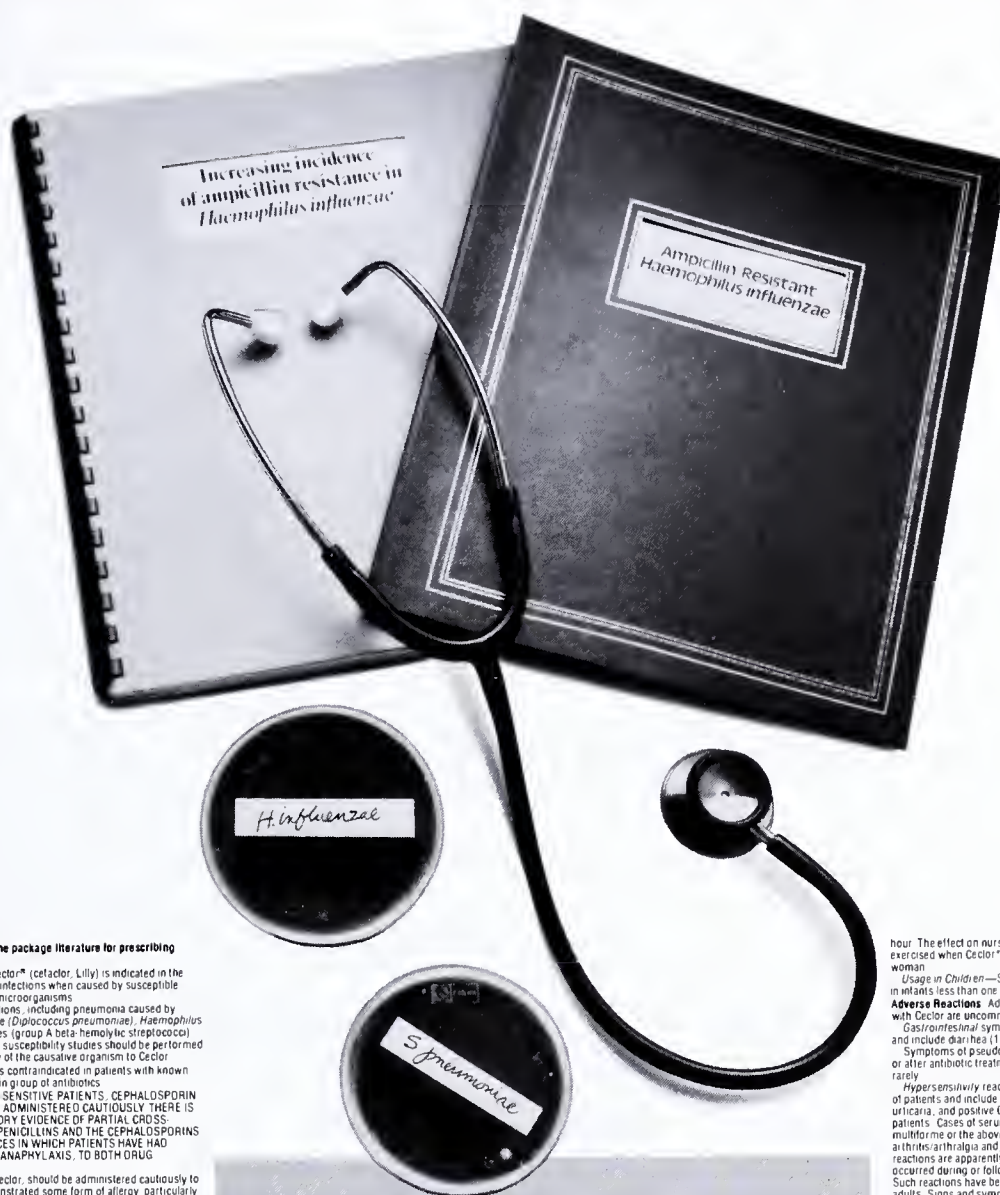
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# An added complication... in the treatment of bacterial bronchitis\*



## Brief Summary. Consult the package literature for prescribing information.

**Indications and Usage.** Cefaclor\* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci). Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefaclor.

**Contraindications.** Cefaclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGICITY OF THE PENICILLINS AND THE CEPHALOSPORINS AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefaclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions:** **General Precautions**—If an allergic reaction to Cefaclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' test have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefaclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefaclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistest® tablets but not with Tes-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy—Pregnancy Category B**—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in terrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefaclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers**—Small amounts of Cefaclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours, respectively. Trace amounts were detected at one

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefaclor.<sup>1-6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefaclor.<sup>7</sup>

# Cefaclor®

## cefaclor

Pulvules®, 250 and 500 mg

hour. The effect on nursing infants is not known. Caution should be exercised when Cefaclor\* (cefaclor, Lilly) is administered to a nursing woman.

**Usage in Children**—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions**—Adverse effects considered related to therapy with Cefaclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70). Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthralgia/arthritis and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefaclor.

Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy.

No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome. Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain**—Transient abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic**—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematologic**—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal**—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

(061782R)

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefaclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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MAY 1983  
VOL. 42, NO. 5

# Hawaii Medical Journal

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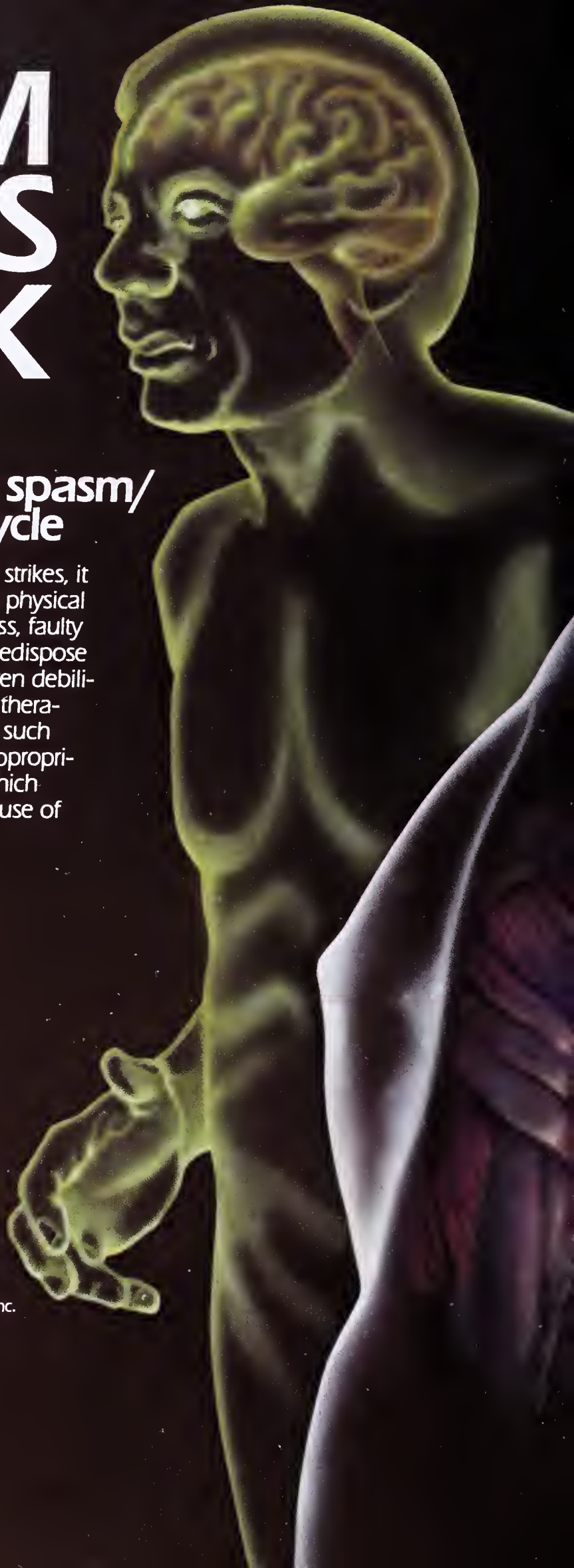


# SPASM STRIKES BACK

## Renewing the spasm/ pain/spasm cycle

Once skeletal muscle spasm strikes, it may recur—usually because physical factors (e.g., muscle weakness, faulty posture, obesity) exist that predispose the patient to this painful, even debilitating problem.<sup>1,2</sup> The key to therapeutic relief lies in correcting such factors and applying other appropriate therapeutic measures, which often include the adjunctive use of Valium® (diazepam/Roche).<sup>1</sup>

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In some patients with skeletal muscle spasm who also experience excessive anxiety, Valium (diazepam/Roche) offers a distinct dual advantage since it is indicated for the management of anxiety disorders and also adjunctively for the relief of muscle spasm due to local pathology.

In addition to helping to relieve skeletal muscle spasm due to local pathology (e.g., herniated lumbosacral discs or acute muscle strain), adjunctive Valium is indicated in major musculoskeletal diseases: cerebral palsy, upper motor neuron disorders, athetosis and stiff-man syndrome—a wider range of uses than for cyclobenzaprine, which has not been found effective in the treatment of spasticity associated with cerebral or spinal cord disease or in children with cerebral palsy. Since drowsiness, fatigue and ataxia sometimes occur, patients should be cautioned against engaging in occupations requiring complete mental alertness, such as driving or operating hazardous machinery. They should also be advised against simultaneous ingestion of alcohol and other CNS-depressant agents or drugs during therapy.

**In skeletal muscle spasm due to local pathology.**

Adjunctive  
**VALIUM<sup>®</sup>**  
diazepam/Roche  
2-mg, 5-mg, 10-mg scored tablets

Please see references and summary of product information on following page.



# Adjunctive **VALIUM**<sup>®</sup> diazepam/Roche

Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders, athetosis, stiff-man syndrome; convulsive disorders (not as sole therapy).

The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anti-convulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anti-convulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**Side Effects:** Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported, should these occur, discontinue drug. Isolated reports of neutropenia, jaundice; periodic blood counts and liver function tests advisable during long-term therapy.

**Dosage:** Individualize for maximum beneficial effect. *Adults:* Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d.; adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

**How Supplied:** For oral administration, Valium scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100\* and 500; Prescription Paks of 50, available in trays of 10\* Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25,† and in boxes containing 10 strips of 10.†

\*Supplied by Roche Products Inc., Manati, Puerto Rico 00701

†Supplied by Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey 07110



ROCHE PRODUCTS INC.  
Manati, Puerto Rico 00701

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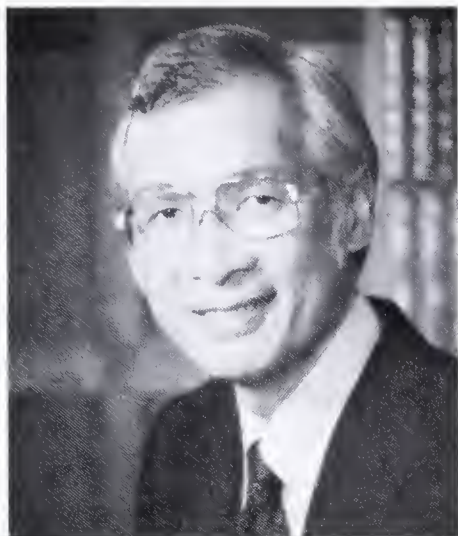
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## President's Message

### Hawaii State Medicaid Program

Most of you will have received a letter dated 3/15/83 from Mr. Earl Motooka, state Medicaid program, to Medicaid providers. Your intent to participate in the Medicaid program and regulations were the subject. Included in the letter was a brief description of Hawaii's Medicaid program, well detailing the services provided, including the intent to provide indigent patients a free choice of physician, a concept stressed by HMA. At a time when state and federal legislation mandates reduction in overall costs of services, continued participation by providers may be affected.

Your HMA has actively emphasized your concerns to our legislature. The desires of our state to provide all the services for our indigent patients would actually go beyond the services provided by many other states.

Two primary concerns will ruin the present program, however, if the present social trend continues over the next few years. Physicians, especially those who provide primary care in areas with many welfare recipients, may not be able to cover their expenses for providing care. This will worsen if additional help becomes necessary to collect co-payment each time from individuals with marginal ability to pay and Medicaid reimbursements are reduced by the amount of the co-payment.

Clinics will have to increase charges to other patients to maintain financial stability. Some would drop out of the program, and this is the second concern. Medicaid reimbursement is presently about 50% of the usual and customary charges as noted in a recent survey by the HMA. If each physician would treat a fair share of indigent patients, the economic impact from reduction in fees will not be too severe. Cost of care for other patients may not have to increase and the physicians who will continue to treat indigent patients regardless of compensation will not be overburdened by the situation.

You have the right and the responsibility to become more involved and participate in these decisions, and your problems providing services for indigent patients should be made known not only to your association but to your legislature.

At this time, please respond to Mr. Motooka's letter and continue to provide care for your Medicaid patients.

Do your fair share to prevent overburdening others, and, with luck, the cost of providing care for all others will not have to increase.

Many of us can still remember the good old days when charity patients were treated in hospital clinics. Care was provided by house officers and appointments to the attending staff were an honor. This may be a means of providing care again, but will hospitals be ready to accept this? The state cannot provide hospital services as effectively as private hospitals, and likewise, state-run clinics will not work. Your cooperation will help to keep the present Medicaid program solvent.

Calvin C.M. Kam, M.D.  
President, Hawaii Medical Association

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THE MULTIVITAMIN/MINERAL FORMULATION

\*Shils ME, Randall HT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME; Philadelphia, Lea & Febiger, 1980, p. 1084.  
Please see summary of product information on reverse page.



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Before prescribing, please consult complete product information, a summary of which follows:

Each Berocca® Plus tablet contains 5000 IU vitamin A (as vitamin A acetate), 30 IU vitamin E (as *d*-alpha tocopheryl acetate), 500 mg vitamin C (ascorbic acid), 20 mg vitamin B<sub>1</sub> (as thiamine mononitrate), 20 mg vitamin B<sub>2</sub> (riboflavin), 100 mg niacin (as niacinamide), 25 mg vitamin B<sub>6</sub> (as pyridoxine HCl), 0.15 mg biotin, 25 mg pantothenic acid (as calcium pantothenate), 0.8 mg folic acid, 50 mcg vitamin B<sub>12</sub> (cyanocobalamin), 27 mg iron (as ferrous fumarate), 0.1 mg chromium (as chromium nitrate), 50 mg magnesium (as magnesium oxide), 5 mg manganese (as manganese dioxide), 3 mg copper (as cupric oxide), 22.5 mg zinc (as zinc oxide).

**INDICATIONS:** Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions, including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals; certain conditions resulting from severe B-vitamin or ascorbic acid deficiency; or conditions resulting in increased needs for essential vitamins and minerals.

**CONTRAINDICATIONS:** Hypersensitivity to any component

**WARNINGS:** Not for pernicious anemia or other megaloblastic anemias where vitamin B<sub>12</sub> is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B<sub>12</sub> deficiency who receive supplemental folic acid and who are inadequately treated with B<sub>12</sub>.

**PRECAUTIONS:** *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

**ADVERSE REACTIONS:** Adverse reactions have been reported with specific vitamins and minerals, but generally at levels substantially higher than those in Berocca Plus. However, allergic and idiosyncratic reactions are possible at lower levels. Iron, even at the usual recommended levels, has been associated with gastrointestinal intolerance in some patients.

**DOSAGE AND ADMINISTRATION:** Usual adult dosage: one tablet daily. Not recommended for children. Available on prescription only.

**HOW SUPPLIED:** Golden yellow, capsule-shaped tablets — bottles of 100



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## Clinical Update

### Dabbling in Parenteral Nutrition

(A Paint-by-Numbers Guide)

Stephen B. Smith, M.D.\*

*This article delineates the calculations involved in writing rational orders for parenteral nutrition. It represents a synopsis of the current state of the art, and mentions newly developed nutritional products.*

#### CALORIC REQUIREMENTS<sup>1</sup>

Caloric Requirement = BEE + 50%

BEE = Basal Energy Expenditure = BSA × BMR × 24h  
(BSA = Body Surface Area BMR = Basal Metabolic Rate)

BSA and BMR can be derived or obtained from nomograms; nomograms are in Grant pp 76-7.<sup>1</sup>

Caloric Requirement in Stressed Patients =  
(BEE + Stress component) + 50%

Stress Components	% Elevation over BEE
Uncomplicated, elective surgical procedures	10%
Major trauma	10-25%
Extensive infections	20-50%
Burns	50-125%
Fever : per degree C	10-13%

#### Quick and Dirty Option #1

University of Pennsylvania<sup>2</sup> considers adequate preoperative nutritional support to consist of:

- 1) > 35 kcal/kg/day
- 2) > 1.5 g protein/kg/day

#### For the Mathematically Minded<sup>3</sup>

Harris-Benedict Equations for  
Calculation of BEE

W = actual or usual wt in kilograms

H = height in centimeters

A = age in years

Female BEE = 655 + (9.6 × W) + (1.8 × H) - (4.7 × A)  
Male BEE = 660 + (13.7 × W) + (5 × H) - (6.8 × A)

#### Fuel

Source	kcal/gm	Minimum	"Good" Range	Maximum
Protein	4	0.8 gm/kg/day	1.5-2.0 gm/kg/day	10 gm/kg/day
Fat <sup>†</sup>	9			
Intra-lipid 10%	11 <sup>(1)</sup>	(2)	As needed <sup>(1)</sup>	PED-4.0 gm/kg/day
Liposyn 10%			Excellent energy source	Adult 2.5 gm/kg/day
Carbo-hydrate	4	As needed to provide needed calories		
AKA CHO Dextrose	3.4	NPC: N ratio <sup>(3)</sup> within the limits of the patient's pancreatic <sup>(4)</sup> response		

Continued on page 108

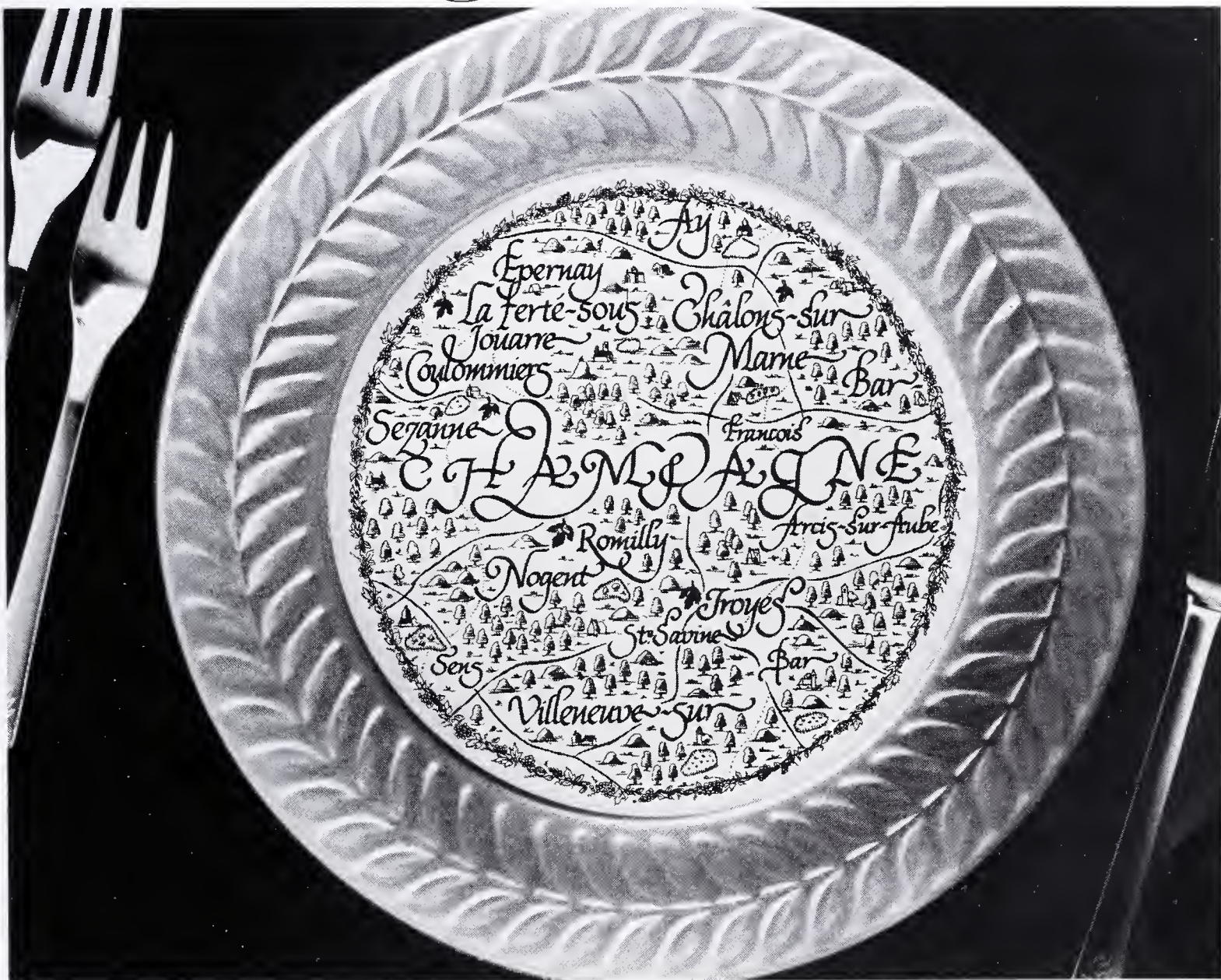
\*Resident, General Surgery (PGY-4), Department of Surgery, Tripler Army Medical Center, Hawaii.

The material contained herein is solely the responsibility of the author and does not represent policy of Department of the Army or Department of Defense.

Accepted for publication April 1982



# Tour The Champagne Country.



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*Champagne Festival. A special selection of tantalizing dishes prepared with this most exuberant of wines will be added to our renowned menu.*

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*Kahala Hilton*



1. The emulsifiers, etc., utilized in Intralipid raise the kcal/gm to 11...high energy density.
2. If not needed for calories, as in central hyperalimentation, Intralipid only needs to be given two to three times a week to prevent Essential Fatty Acid Deficiency (EFAD).
3. NPC:N + Non-protein Calories : Nitrogen  
Non-protein Calories = No. of kilocalories derived from fat and CHO.  
Nitrogen = Grams of nitrogen. Calculated by dividing the grams of dietary protein by 6.25 (a constant derived from the ratio of nitrogen to the other elements in protein). See exercises following.
4. Hyperglycemia can be deadly and result in hyperglycemic hyperosmolar nonketotic dehydration.

† A recent product, Intralipid 20%, has become available. It contains 10 kcal/gm but has 20 gm/100 cc resulting in 200 kcal/100 cc or 2.0 kcal/cc, an extremely energy-dense product. More about Intralipid later.

### Electrolytes, Minerals and Vitamins

Phosphorus—Add 10-20 meq/liter as  $KPO_4$ —adjust to maintain normal serum concentration\*

Calcium—Add 5-10 meq/liter as Ca Gluceptate—(Keep Ca/ $PO_4$  ratio = 1:2 to prevent precipitation) 0.2-0.3 meq/kg/day

Acetate—Buffers HCl liberated during metabolism of the synthetic amino acids in most parenteral nutrition solutions 15-30 meq/liter as K Acetate or Na Acetate

K—Add more K to total 40-50 meq/liter from all sources—adjust to maintain adequate serum concentration

Na—Add more Na to total 40-50 meq/liter from all sources—adjust to maintain adequate serum concentration

Cl—Needs to equal Na to prevent acid-base disturbances

Mg—5-10 meq/liter as  $MgSO_4$  0.35-0.45 meq/kg/day

\*Freamine<sup>®</sup> contains 20 meq/liter of phosphate

### Trace Minerals

Most hospital pharmacies have a trace mineral formulation to prevent known trace mineral deficiencies. Commercial products are also becoming available. Travenol puts out MTE-4<sup>®</sup>, 4 cc of which more than meet the current recommended dosages for copper, zinc, chromium, and manganese.

### Vitamins

Most pharmacies have MV1-12, a formulation formulated by the MV1 Company to meet the standards proposed by the AMA Nutrition Advisory Group in 1975. This purportedly meets requirements for all vitamins except Vitamin K.

Order one dose of MV1-12 per day.

Order 5-10 mg Vitamin K I.M. q week.

**Problem 1:** A 70 kg physiologic paragon consumes a typical American diet<sup>1</sup>

2700 Kcal/day

1250 Kcal as CHO

1126 Kcal as FAT

324 Kcal as Protein (81 gm)

Calculate his NPC : N ratio

**Solution**                      **Non-protein Calories**

CHO	1250
FAT	1126
	<hr/>
	2376

### Nitrogen

$$\text{Protein} = \frac{\text{Kcal protein}}{4 \text{ Kcal/gm protein}} = \frac{324 \text{ gm}}{4} = 81 \text{ gm}$$

$$\text{Nitrogen} = \frac{81 \text{ gm}}{6.25} = 13 \text{ gm}$$

$$\text{NPC : N} = \frac{2376 \text{ Kcal}}{13 \text{ gm}} = 183$$

### Surprise!

Notes: The ideal NPC : N ratio is somewhere between 100 and 200, with 150 considered a good "ball park" figure.

### Discussion:

If NPC : N < 100, then some of the patient's dietary protein will be used for energy either because of

a) inadequate total calories or

b) because of surplus protein.

Dextrose is much cheaper than protein merely to provide calories.

If NPC : N > 200 either

a) there are excessive non-protein calories or

b) there is inadequate dietary protein.

Excess non-protein calories will rapidly lead to fatty liver with its sequelae.

Inadequate dietary protein will result in catabolism.

**Problem 2:** "A classic in its own time"—The classic American TPN formulation consists of:

D 50 W 500 cc

Protein 8.5% 500 cc

with various and sundry mineral and electrolyte additions.

Calculate:                      Total calories  
Calories/cc  
NPC : N ratio

**Solution:**                      **Total Calories**

CHO

$$\frac{50 \text{ gm}}{100 \text{ cc}} \text{ CHO} \times 500 \text{ cc} = 250 \text{ gm CHO} \times \frac{4 \text{ Kcal}}{\text{gm CHO}} = 1000 \text{ Kcal}$$

PROT

$$\frac{8.5 \text{ gm}}{100 \text{ cc}} \text{ Protein} \times 500 \text{ cc} = 42.5 \text{ gm Protein} \times \frac{4 \text{ Kcal}}{\text{gm Protein}} = 170 \text{ Kcal}$$

$$\therefore \text{Total calories} = 1170 \text{ Kcal}$$

$$\text{Calories/cc} = \frac{1170 \text{ Kcal}}{1000 \text{ cc}} = \frac{1.17 \text{ Kcal}}{\text{cc}}$$

which is roughly 1 Kcal/cc

### Discussion:

Surgeons love round numbers and can handle more easily the concept of 1 Kcal/cc (since they can figure it out using their fingers).

NPC : Nitrogen Ratio

$$\text{NPC} = 1000 \text{ Kcal}$$

$$\text{Nitrogen} = \frac{42.5 \text{ gm Protein}}{6.25} = 6.8 \text{ gm Nitrogen}^*$$

$$\text{NPC : N ratio} = \frac{1000 \text{ Kcal}}{6.8} \approx 147$$

### Discussion:

The classic formula provides an excellent NPC : N ratio and is easy to figure out—that's probably why it's a classic.

Using actual analyses instead of dividing grams protein by the 6.25 constant, the actual nitrogen content of the Protein formulations per 500 ml bottle is:

Continued on page 110



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 Freamine  $\ddot{I}\ddot{I}$  8.5% : 6.5 gm  
 Travasol 8.5% : 7.15 gm

**Problem 3: Peripheral parenteral nutrition**

Patient admitted to your Team:

50 y.o. female Wt 115# Ht 5'1"

Huge retroperitoneal tumor presumed benign or of low-grade malignancy; but producing early satiety 2° to size.

Calculate caloric requirements for TPN pre and post surgery. Select appropriate route.

**Solution:****Calculations/Rationale**

Route: Gut is usually the preferred route. Patient would have to be fed via tube pre-op because of obstructive symptoms. A jejunal feeding tube could be inserted at time of surgery.

Peripheral TPN was chosen because of patient comfort pre-op and to avoid potential complications of jejunal feeding tube post-op, since prolonged post-op non oral feeding not anticipated.

**Caloric Requirements:**

from nomograms  $\left\{ \begin{array}{l} \text{BSA } 1.50 \text{ m}^2 \\ \text{(Ht 61" Wt 115\#)} \\ \text{Basal metabolic rate} \\ \text{(50 y.o. female)} \end{array} \right. 33.9 \text{ Kcal/m}^2/\text{n}$

Basal energy expenditure =  $\text{BSA} \times \text{BMR} \times 24\text{h} = 1.50 \text{ m}^2 \times 33.9 \text{ Kcal/m}^2/\text{h} \times 24\text{h/day} \approx 1255 \text{ Kcal/day}$

Caloric requirement [Basal energy + stress component] + 50%

Patient under no stress, therefore, will add 50% of BEE  $\approx 1200 + 600 = 1800$

From University of Pennsylvania:<sup>2</sup>

$35 \text{ Kcal/kg/day} \times 52 \text{ Kg} = 1820 \text{ Kcal/day}$

**Recipe**

The formulation of any recipe depends on the limitations imposed by the chosen route. Because the peripheral route was chosen, the dextrose concentration must be limited to less than 12.5%. D10 (surgeons like round numbers) and Travasol 5.5% are routinely used for peripheral venous nutrition.

Fluid requirements for 50 kg pt = 2100 cc/day

Patient with normal renal status

$\therefore$  will run IVs at 100 cc/h (love those round numbers)

Basic recipe  $\left\{ \begin{array}{l} 500 \text{ cc Travasol } 5.5\% \\ 500 \text{ cc D20W} \end{array} \right\} 100 \text{ cc/h}$

**Total Calories**

$\text{CHO} = \frac{10 \text{ gm}}{100 \text{ cc}} \times \frac{100 \text{ cc}}{\text{h}} \times \frac{24\text{h}}{\text{day}} = \frac{240 \text{ gm}}{\text{day}} \times \frac{4 \text{ kcal}}{\text{gm}} = \frac{960 \text{ kcal}}{\text{day}}$

$\text{PROT} = \frac{2.75 \text{ gm}}{100 \text{ cc}} \times \frac{100 \text{ cc}}{\text{h}} \times \frac{24\text{h}}{\text{day}} = \frac{66 \text{ gm}}{\text{day}} \times \frac{4 \text{ kcal}}{\text{gm}} = \frac{264 \text{ kcal}}{\text{day}}$

Total Calories = 1224 kcal

CHO calories = 78% total calories

PROT calories = 22% total calories

$\text{NPC:N} = 960 : 66 \text{ gm protein} \div 6.25 \text{ (factor for nitrogen content of protein)}$

$= 960 : 10.56 = 91$

The NPC:N ratio of less than 100 implies that there are not enough non-protein calories for the protein to be used as

protein—some of it will be used for energy.

This recipe is inadequate. However, by adding one bottle of Intralipid 10% a day to the recipe, a masterpiece is created.

CHO (as above)—960 kcal/day

PROT (as above)—264 kcal/day

$\text{FAT} = \frac{50 \text{ gm}}{500 \text{ cc}} \times \frac{500 \text{ cc}}{\text{day}} = \frac{50 \text{ gm}}{\text{day}} \times \frac{11 \text{ kcal}}{\text{gm}} = 550 \text{ kcal/day}$

Total Calories = 1774

$\therefore \text{CHO calories} = 54\% \text{ total calories}$

FAT calories = 31% total calories

PROT calories = 15% total calories

$\text{NPC:N} = 1774 - 264 : 66/6.25$

$= 1510 : 10.56 \approx 143$

**Voila!**

Postoperatively more calories, as indicated, can be added by increasing Intralipid or using Intralipid 20%, if volume is a limitation.

**Problem 4: Central Parenteral Nutrition**

The following long-term patient is transferred to your service: 33 y.o. male S/P gunshot wound to abdomen resulting in small output (< 100 cc) pancreaticocutaneous fistula and pancreatitis. Ht 5'11 Wt 195

Current TPN:  $\left. \begin{array}{l} 500 \text{ cc Freamine } 8.5\% \\ 500 \text{ cc D40W} \\ \text{Intralipid } 10\% \text{ } 500 \text{ cc q } 12 \text{ h} \end{array} \right\} 100 \text{ cc/h}$

12° UUN: 210 mg/dl TV 2050

Calculate patient's total calories, calorie sources, and

NPC : N ratio, and nitrogen balance

**Solution:****Total Calories**

$\text{CHO} = \frac{20 \text{ gm}}{100 \text{ cc}} \times \frac{100 \text{ cc}}{\text{h}} \times \frac{24\text{h}}{\text{day}} = 480 \text{ gm/day} \times \frac{4 \text{ kcal}}{\text{gm}} = \frac{1920 \text{ kcal}}{\text{day}} \sim 56\%$

$\text{PROT} = \frac{4.25}{100 \text{ cc}} \times \frac{100 \text{ cc}}{\text{h}} \times \frac{24\text{h}}{\text{day}} = 103 \text{ gm/day} \times \frac{4 \text{ kcal}}{\text{gm}} = \frac{412 \text{ kcal}}{\text{day}} \sim 12\%$

$\text{FAT} = \frac{50 \text{ gm}}{500 \text{ cc}} \times \frac{500 \text{ cc}}{12 \text{ h}} \times \frac{24\text{h}}{\text{day}} = 100 \text{ gm/day} \times \frac{11 \text{ kcal}}{\text{gm}} = \frac{1100 \text{ kcal}}{\text{day}} \sim 32\%$   
 $\frac{3432 \text{ kcal}}{\text{day}}$

$\text{NPC:N} = 3432 - 412 : 103/6.25$   
 $3020 : 16.5 = 183$

**Nitrogen Loss**

$\text{UUN}_{12\text{h}} = 210 \text{ mg/dl} \quad \text{TV}_{12\text{h}} = 2050 \text{ ml}$

$\text{UUN}_{24\text{h}} = \frac{210 \text{ mg}}{\text{dl}} \times \frac{\text{dl}}{100 \text{ ml}} \times \frac{1 \text{ gm}}{1000 \text{ mg}} \times \frac{2050 \text{ ml}}{12 \text{ h}} \times \frac{24 \text{ h}}{\text{day}} = \frac{8.6 \text{ gm}}{\text{day}}$

Total Nitrogen Loss =  $\text{UUN}_{24\text{h}} + 2^1 = 8.6 + 2 = 10.6$

**Nitrogen Balance**

Patient receiving 103 gms protein/day

Nitrogen in =  $\frac{\text{Protein in}}{6.25} = \frac{103}{6.25} \approx 16.5 \text{ gm Nitrogen}$

Nitrogen Balance =  $N_{\text{in}} - N_{\text{out}} = 16.5 \text{ gm} - 10.6 \text{ gm} = +5.9 \text{ gm}$

$\therefore$  The current formulation is adequate.

Continued on page 111

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3. Michel L, Serrano A, Malt RA: Current concepts: nutritional support of hospitalized patients. *N. Engl. J. Med.* 1981; 304: 1147-52.

## Book Reviews

Ed: Douglas G. Massey, M.D.

**The Psychiatric Hospital and the Family.** By H.T. Harkin, M.D., Editor. SP Medical & Scientific Books, New York, 1982.

The complex interaction of patient, family, and psychiatric hospital is important and of potential interest to all mental health professionals. However, this book will interest mainly those who work in hospitals or do family therapy; most chapters presuppose basic knowledge in these areas.

Overall, the section of the book on research is the strongest. The other 2 sections have useful chapters by Harbin on the development and operation of a family-oriented hospital service; by McFarlane on multiple-family therapy; by Anderson and Reiss on family treatment of hospitalized chronic schizophrenics; and by Bell, on family/hospital relations in non-Western cultures.

The major weakness of this book is its unevenness. The chapters by Haley, Sussman, and Bruggen and O'Brien seem to this reviewer largely to lack utility. The better chapters make the book worthwhile, and the editor and publisher are to be commended for having brought it out.

Richard A. Markoff, M.D.

\* \* \*

**Developmental Disabilities: Theory, Assessment and Intervention.** By Michael Lewis, Ph.D., and Lawrence Taft, M.D., Editors. SP Medical & Scientific Books, New York, 1982.

This book is the product of an interdisciplinary symposium focusing on developmentally disabled preschool children. A number of the participants are nationally known experts, roughly half M.D.s and half Ph.D.s, so the book may be regarded as a state-of-the-art presentation.

Organization of the book is based on 5

Continued on page 112

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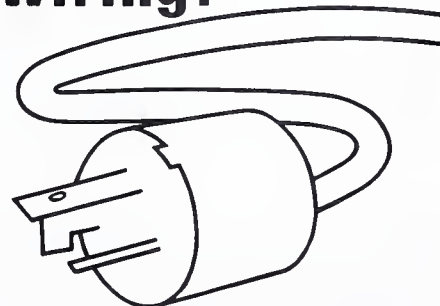
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developmental areas—sensory, motor, cognitive, language, and affective/temperamental. The editors and authors are aware that handicapped preschoolers do not lend themselves to such a didactic convenience, and have therefore provided in each section chapters that discuss developmental theory, techniques of assessment, and clinical applications. Thus, the chapters on clinical applications of new research on vision, hearing, physical handicap, cognition and I.Q., language and temperament/emotions are generally interesting and useful. Although the state of the art of preschool assessment and intervention has progressed dramatically in 20 years, much is still needed before widespread screening can be scientifically and ethically justified (e.g., the Child Health Assessment Program). By contrast, the value of educational intervention programs for socioculturally deprived children is exciting indeed, given the social and medical problems of poverty.

For physicians who work with preschoolers, about a third to half the book is useful, which isn't bad, given the quality of the presentations. My only quibble is the absence of theory and programs for multi-handicapped children.

William M. Bolman, M.D.

\* \* \*

**Harper's Review of Biochemistry.** By D.W. Martin, F.A. Mayes, and V.W. Rodwell. 614 pp. Lange Medical Publications, Los Altos, 1981.

The 18th edition of this book has been updated considerably and now is very up-to-date, covering the important aspects of biochemistry and cell biology. The book has changed from a medical biochemistry text to a general biochemistry-cell biology text. It is recommended for those wishing to have a concise coverage of the important aspects of biochemistry and cell biology. Other texts are available which are more detailed and comprehensive and have double the pages. Its numerous pictures and illustrations make the text attractive.

Anonymous

\* \* \*

**Regulatory Processes in Clinical Endocrinology.** By Walter B. Essman, Editor. 171 pp. Spectrum Publications, Inc., Jamaica, New York, 1982.

This book attempts to focus on the control mechanisms that are important for a number of topics in clinical endocrinology. Although small in number of pages, the scope includes hormone-cell interaction, control mechanisms related to developmental, pharmacological, nutritional, and biochemical mechanisms. It is packed with information and not always easy to read. The chapter on insulin-chromatin interaction has as its main theme that peptide hormones such as in-

sulin do enter their target cells rather than being classically bound to the cell membrane. Previously, only steroid hormones and non-peptide hormones were thought to act by entering the cell. The authors also deal with Vitamin A and its relationship to endocrine and metabolic processes, and diseases of aging. The latter proposes a hormonal-metabolism pattern for aging and its specific diseases. The law of deviation of homeostasis is suggested and evidence is given. All in all, it is a neat little book for the reader who does not want to miss anything in endocrinology.

John H.C. Kim, M.D.

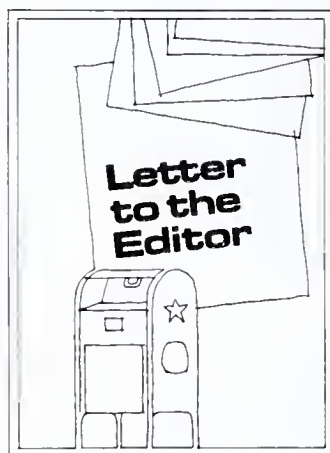
\* \* \*

**The Principles of Electrocardiography.** By M.J. Goldman, M.D. Lange Medical Publications, Los Altos, 1982.

This standard textbook is now in its 11th edition and has been published in 7 foreign languages. Clearly, its public has made a decision about utility and effec-

tiveness; a reviewer may only add his concurrence. With the explosion of non-invasive testing in cardiology, there is an even greater need for a thorough understanding of the surface electrocardiogram by clinicians. This simple, direct, and inexpensive means of recording cardiac electrical activity often provides sufficient data about electrophysiologic events, chamber size, and possible injury that the need for further investigations diminishes. Goldman's book provides substantial information for the student, resident, and non-cardiologist practitioner for a firm background in electrocardiography. Lucid writing, superb examples, and good clinical correlation make this an excellent text. The reviewer searches far and wide for disagreements with the author but finds only a difference in choice of style of interpretation of electrocardiograms. This book is recommended enthusiastically.

Irwin J. Schatz, M.D.



To the Editor:

This letter is written in response to a criticism of your May editorial in regard to "Heptachlor, a non-emergency." To me, it seemed obvious that your editorial was exactly to the point, and that the hoopla was much more a media event than a medical problem.

The comments made by Dr. Janette Sherman bear painful witness to what has happened in the last decade or so in regard to the use of virtually all chemicals. Quite obviously, nothing, including human saliva, can be claimed to have no human health effect. In addition, to claim that carcinogenicity in animal species equates with the same in humans is not a scientific principle, and even insults the common sense of a layman.

While it is true that much research has been done in regard to the use of heptachlor and its effect on experimental animals, the toxic level is far beyond anything demonstrated in our milk contamination, and quite obviously no threat exists to our Hawaii population.

Thank you very much for your reasoned and accurate editorial; I, like so many others, truly appreciate your writing.

Russell T. Stodd, M.D.  
Kahului, Hawaii 96732



Harry L. Arnold Jr., M.D.

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\* \* \*

The "Anonymous" author of that amusing satirical poem, "The Skin Man," which appeared in our November issue, has been identified. A. Fletcher Hall, M.D., of Pacific Palisades, Calif., took his wife to Professor of Obstetrics Frederick ("Fritz") Irving about 1932, when she was pregnant, and after Dr. Irving had kidded him a little about his plans to go into dermatology, Dr. Hall asked Dr. Ir-

ing if he had ever read "The Skin Man." Read it?" said Dr. Irving. "Hell, I wrote it!" Professor Irving was also the author of "The Ballad of Chambers Street," another classic poem.

\* \* \*

*Triazolam (Halcion, Upjohn), a new hypnotic, was said by Goodman & Gilman (Chapter 17, page 370) to be a very nearly ideal hypnotic because of its rapid onset of effect and its short half-life. Comes in 0.25 and 0.5-mg tablets.*

\* \* \*

A new federal law has repealed the PSRO and replaced it with the UQCPRO—which stands for the Utilization and Quality Control Peer Review Organization. The AMA House of Delegates will study it and try to make it acceptable and workable—or if they cannot, seek its repeal.

\* \* \*

*Ask Control-o-fax (3070 West Airline Highway, Box 778, Waterloo, Iowa 50704) for their new free booklet entitled Collection Guide for the Doctor and Office Assistant. Improve your collections!*

\* \* \*

Talwin Nx is now replacing Talwin 50 (pentazocine) for pain relief. It contains naloxone, to prevent abuse as a "street drug" by combining it with tripelethamine, a combination known as "T's and Blues." The naloxone will, if it is so used, cancel out the effects of the Talwin.

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Disparagement of the plastic-surgical qualifications of two board-certified otolaryngologists in Atlanta has blown up into a \$10 million libel suit against the two responsible diplomates of the American Board of Plastic Surgery.

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A new cresolphthalein calcium reagent which rapidly measures calcium in serum or urine, with linearity to at least 18 mg/dl, is announced by EM Science, 480 Democrat Road, Gibbstown, N.J. 08027. It contains no cyanide. They call it Ultra-Chem. It comes in two 100-ml containers, with a bottle of calcium standard. American Scientific Products distributes it.

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# Respiratory Emergencies in Ambulance Services—Oahu, 1978-79

J.K. Sims, M.D., and Margaret Ikeda, R.N., Honolulu

• *Pre-hospital emergency ambulance services encounter many forms of acute and chronic respiratory emergencies each year,<sup>1-5</sup> life-threatening due to their proclivity for producing cardiopulmonary arrest in minutes to hours if not treated. Little is known regarding the pre-hospital spectrum and incidence of respiratory emergencies as to public health and comparative emergency medical services aspects.*

The incidence and spectrum of acute and chronic respiratory emergencies for the pre-hospital emergency ambulance services of the City and County of Honolulu Department of Health Ambulance Services and their contract ambulance service units were determined for 1978 and 1979, the following being the formal specific aims of the research plan:

- Determination of the spectrum of respiratory disorders in the cohort of respiratory emergencies;
- Determination of the numbers of each respiratory disorder in the cohort of respiratory emergencies;
- Determination of the incidence of respiratory emergencies and each respiratory disorder per 100,000 Oahu emergency calls per year.

## Materials and Methods

The City and County of Honolulu is, in fact, the Island of Oahu and measures 592.7 square statute miles in area.<sup>6</sup> The estimated population of the City and County of Honolulu during calendar years 1978 and 1979 averaged 789,400.<sup>8</sup>

Public ground emergency ambulance services on the Island of Oahu are provided by the City and County of Honolulu Department of Health Ambulance Services and their contract ambulance services,<sup>9</sup> whose ambulance technician staffing consists of Emergency Medical Technicians (EMT-As)<sup>10</sup> and Mobile Intensive Care Technicians (MICT paramedics).<sup>11</sup> The City and County of Honolulu Ambulance Services and their con-

tract emergency ambulance services responded to approximately 95% of all ground emergency ambulance calls on Oahu during 1978-79. An annual average of 30,250 ambulance calls occurred during these two years, which included an annual average of 1,650 respiratory emergency calls.

A computer printout was obtained of all pre-hospital emergency ambulance incident reports for which the standardized emergency ambulance report form (ARF) respiratory emergency box was checked off by ambulance technicians. Using the respiratory emergency ARF numbers, the respective original ambulance report forms were retrieved and reviewed to obtain the following information:

- Verification of each respiratory emergency incident;
- Transcription of the ambulance technicians' clinical impression, to identify the spectrum of the respiratory emergencies encountered and to quantify the types of respiratory emergencies for incidence determinations.

Confidentiality of patient information was preserved. Data were manually collated into an alphabetized clinical impression categorical format. The annual average number of cases was calculated manually for each clinical impression category, based on the separate 1978 and 1979 tallies. The incidence of the respiratory emergencies for 100,000 emergency ambulance calls, for each clinical impression category, was calculated for the 30,250 average calls overall for the two years, using the annual average times 3.31.

## Results and Discussion

Respiratory emergencies constituted an average of 5% of the emergency ambulance calls responded to by the City and

County Ambulance Services and their contract ambulance services for each of the years, 1978 and 1979. For these two years, the average incidence of respiratory emergencies was 5,461.5 respiratory emergencies per 100,000 emergency ambulance calls.

The spectrum of respiratory emergencies was determined, collated in an alphabetic categorization using the ambulance technician clinical impressions (Table 1). The 20 most common pre-hospital emergency ambulance service respiratory emergencies were: asthma (incidence 943.55/100,000 calls); cardiopulmonary arrest (453.47); hyperventilation syndrome (324.38); dyspnea (304.52); congestive heart failure (200.26); emphysema (195.29); cancer (152.26); chronic obstructive pulmonary disease (COPD) (145.64); near drowning (110.89); upper respiratory infection (URI) (109.23); pneumonia (107.58); drug overdose/substance abuse (105.92); pulmonary edema (102.61); airway obstruction (foreign body) (92.68); trauma (82.75); acute myocardial infarction (74.48); cerebrovascular accident (CVA) (62.89); noxious fume inhalation (56.27); bronchitis (54.62); allergic reactions/anaphylaxis (54.62).

Respiratory emergencies constitute some of the most serious pre-hospital emergencies, since they may result in cardiopulmonary arrest. In fact, of the respiratory emergencies, cardiopulmonary arrest was the second most common respiratory emergency encountered.

The spectrum of respiratory emergencies included respiratory, cardiac, oncologic, environmental (*e.g.* near drowning), toxicological, infectious, traumatic, neurological, neuromuscular, and allergic/anaphylactic situations most commonly (Table 1). The role of extra-pulmonary compromise of the respiratory system was also seen, such as that resulting from processes involving acute abdomen, gallbladder disease, gastritis, gastrointestinal hemorrhage, various cancers, ascites, cardiac disorders (including cardiac dysrhythmias), an ectopic pregnancy, marine organism afflictions, seizures, and vaso-vagal syncope.

Airway obstruction was caused by a variety of foreign bodies, including the following (biennial number of cases will be henceforth in parentheses throughout): apple (1); ball bearing (1); bone (2); brooch (1); candy (6); coin (5); cough drop (1); dentures (1); food, unspecified (9); food/mucus/gagging (2); meat (7); olive (1); paper (2); peanut (1); pill (3); plastic cap (1); popcorn (1); plastic bag (1); rubber band (1); seed (3); splinters (1); taco chip (1); toy (1); unknown (3). There were an average of 28 foreign body airway obstructions annually during the study period.

Allergic and anaphylactic reactions were attributed by the pre-hospital ambulance patients to a variety of offenders, as

From the Hawaii Medical Association Emergency Medical Services Program (HMA-EMS)

Supported by a grant from the Leahi Trust Research Grant Program of Hawaii, administered through the Research Corporation of the University of Hawaii.

Accepted for publication June 1982



follows: apple pie or teriyaki (known allergy to butter) (1); acetaminophen (1); acetaminophen versus lincomycin (1); acetylsalicylic acid (ASA or aspirin) (1); bee sting (4); erythromycin (2); foods (excluding those listed elsewhere) (1); mango (2); mayonnaise (1); penicillin (2); seafood (1); shrimp (3); spray deodorant (1); taro leaf and coconut milk (1); teriyaki (1); anti-tuberculosis medications (1); unknown (9).

An average of 16.5 allergic reactions or anaphylaxes occurred annually during the study period.

Apnea cases excluded the cardiopulmonary arrest cases and included the following disorders: aborted sudden infant death syndrome (SIDS) (2); crying (3); temper tantrum (1); unknown (57-year-old man) (1).

Asthma was the most common respiratory emergency observed. Most asthma patients were adults, suggesting that pediatric asthma patients are probably taken most often directly to the physician or hospital emergency departments by private car rather than by ambulance.

Aspiration, as a respiratory emergency at an incidence of 40/100,000 pre-hospital ambulance cases, is undoubtedly under-represented and is likely to be included in categories other than respiratory, such as trauma and neurological. Aspiration of blood was not noted, in spite of the traumatic respiratory emer-

gencies seen. The incidence of aspiration in this series is undoubtedly too low as an estimate of the general incidence of aspiration in the emergency ambulance patient population.

In contrast to the incidence of asthma (943.55/100,000 ambulance patients), the pre-hospital incidence of bronchitis was low (54.62/100,000).

Surprisingly, cancer played an important role in the genesis of respiratory emergencies. Malignancies encountered included the following: bladder, urinary (1); bladder, urinary, metastatic to lungs (1); gastric, metastatic to lungs (1); liver (3); lung (71); pancreas (1); throat (7); "terminal" (2); unknown/unspecified (5); total (in 2 years) 92. Although not studied herein, it is possible that the increasing out-patient management of malignancies, the increased survival times for malignancies, and a more favorable lay outlook on the recoverability from malignancies are providing the emergency ambulance services with oncology patients for emergency respiratory evaluation and treatment. This requires that emergency ambulance technicians receive specific training in oncologic emergencies and their management, particularly as to respiratory aspects and moral/ethical dilemmas.

That cardiopulmonary arrest was second in incidence serves to emphasize the importance of cardiopulmonary resuscitation training for ambulance techni-

cians, at both basic and advanced levels. Cerebrovascular accidents (CVAs or strokes) remain an important etiology in producing respiratory emergencies. Pre-hospital neurological assessment is critical in delineating a CVA as etiologic factor in the respiratory emergency.

Congestive heart failure ranked 4 on the respiratory emergency incidence list.

Chronic obstructive pulmonary disease (COPD), ranking 8 on the list, is important in that oxygen must be administered especially carefully to these patients.

Drug/medication overdoses and substance abuse produced respiratory emergencies via a variety of agents: ethanol alone (15); ethanol and diazepam (2); ethanol, diazepam, and secobarbital (1); diazepam and secobarbital (1); diazepam and meperidine (1); propoxyphene and meprobamate (1); phenytoxin and phenobarbital (1); heroin (8); marijuana (1); medihaler (1); morphine sulfate (1); narcotic, unknown type (2); pentobarbital (1); Marax TM (2); paint (sniffing) (5); with marijuana (2); with cocaine (1); phencyclidine (PCP) (1); "pills" (1); secobarbital (1); doxepin (1); aspirin (2); possible overdose (5); unknown drug overdose (7); total 64. These diagnoses are from the clinical impressions, based on history and at-scene findings, rather than the result of laboratory toxicological analysis. These incidences would not re-

*Continued on page 116*

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flect drug utilization, since these cases do not include the poisoning and behavioral category cases from the ambulance report form.

Unspecified dyspnea rated fourth in incidence among the respiratory emergencies, surpassed by hyperventilation syndrome. Hyperventilation is not an uncommon diagnosis in emergency rooms; however, the quantitated incidence was surprising for the ambulance environment.

Marine organism afflictions (while rare as causative of respiratory emergencies herein) consisted of three Portuguese man o'war stings (*Physalia utriculus*).

Acute myocardial infarction is under-represented as a diagnosis in this series, since the cardiac emergency incidence is not included herein.

Noxious fume inhalation, ranking 18 among respiratory emergencies, included the following agents: carbon monoxide (3); chemical fertilizer (1); chlorine gas (1); contaminated SCUBA tank air (1); "elevator gas" (1); fire smoke (17); fire-cracker smoke (1); natural gas (2); paint fumes (2); stove gas (2); tear gas (3); total 34. Specific training in noxious fume inhalation poisoning and its management must be provided for emergency ambulance technicians.

Trauma included the following: back contusions (1); blunt trauma: cervical spine injuries (5); chest, unspecified (9); chest, flail (1); chest, rib fractures (7); chest, rib fractures with pneumothorax (1); chest, S/P kick/punch (1); facial (nose) (3); gunshot wounds (GSW): chest (1); with hemopneumothorax (2); head, neck, shoulder (1); multiple trauma: jaw, head, flail chest, possible ruptured spleen, pancreas, pneumothorax (1); stab wounds: face and neck (1); head (7); head and chest (1); head and neck (1); neck (2); with pneumothorax (1); unspecified (1); sternal injury (1); tracheal trauma (2); total 50.

Upper respiratory infections caused a significant number of the pre-hospital respiratory emergency calls, surprisingly.

A large number of the respiratory emergencies bore multiple clinical impressions (see "mixed" category in Table 1), with extensive differential diagnoses. Training of ambulance technicians in the differential of clinical impressions is useful, despite field limitations for making precise estimations of asthma, congestive heart failure and dyspnea, particularly. The field 12-lead electrocardiogram capability appears to be useful in separating the acute myocardial infarction cases from these three disorders particularly, as well as assessing the cardiac arrhythmias associated with the respiratory emergencies. Extensive training in history-taking, physical exam techniques, and pulmonary auscultation, remains mandatory for the ambulance crew.

Table 1  
Spectrum, Number, and Incidence of  
Oahu Ground Ambulance Service  
Respiratory Emergencies, 1978-1979

EMERGENCY	# Cases 1978	# Cases 1979	Average Annual	Incidence per 100,000 calls
Abdominal tightening	0	1	0.5	1.66
Acid-base imbalance	0	1	0.5	1.66
Acute abdomen	1	0	0.5	1.66
Agonal respirations	1	0	0.5	1.66
Airway obstruction (foreign body)	35	21	28	92.68
Allergy/Anaphylaxis	16	17	16.5	54.62
Amyotrophic lateral sclerosis (ALS)	1	0	0.5	1.66
Anemia	0	1	0.5	1.66
Angina	22	8	15	49.65
Apnea	3	4	3.5	11.59
Ascites	0	1	0.5	1.66
Aspiration	8	16	12	39.72
Asthma	283	287	285	943.35
Birth defects, multiple	0	1	0.5	1.66
Bronchitis	18	15	16.5	54.62
Cancer	52	40	46	152.26
Cardiac arrhythmias	11	18	14.5	48.00
Cardiac asthma	0	1	0.5	1.66
Cardiac dysfunction*	0	1	0.5	1.66
Cardiac insufficiency (mitral valvular)	0	1	0.5	1.66
Cardiac output disorder*	1	0	0.5	1.66
Cardiac tumor*	0	1	0.5	1.66
Cardiogenic shock	0	1	0.5	1.66
Cardiopulmonary arrest	124	150	137	453.47
CNS depression*	1	0	0.5	1.66
Cerebrovascular accident (CVA)	17	21	19	62.89
Chest cold	0	1	0.5	1.66
Chest infection*	1	0	0.5	1.66
Chest pain*	0	4	2	6.62
Chest wall spasm	2	4	3	9.93
Chronic illness	1	4	2.5	8.28
Coma*	3	1	2	6.62
Congestive heart failure (CHF or CCF)	60	61	60.5	200.26
Chronic obstructive pul- monary disease (COPD)	34	54	44	145.64
Congestion	1	13	7	23.17
Cor pulmonale	0	1	0.5	1.66
Costochondritis	1	2	1.5	4.97
Croup	2	3	2.5	8.28
Crying	4	0	2	6.62
Drug overdose/substance abuse	33	32	32.5	105.92
Dyspnea	121	63	92	304.52
Ectopic pregnancy	1	0	0.5	1.66
Emphysema, pulmonary	64	54	59	195.29
Epiglottitis	1	1	1	3.31
"Flu"	14	15	14.5	48.00
"Gagging"	0	1	0.5	1.66
Gallbladder disease	0	1	0.5	1.66
Gastritis	2	0	1	3.31
Gastrointestinal (GI) bleed	0	2	1	3.31
Hanging	0	2	1	3.31
Hemoptysis	0	2	1	3.31
Hiccoughing	1	2	1.5	4.97
Hypertension	1	0	0.5	1.66
Hyperventilation syndrome	190	6	98	324.38
Hypoglycemia	3	0	1.5	4.97

\* = unspecified

Table 1 continued on page 117

Table 1 continued from page 116

EMERGENCY	# Cases 1978	# Cases 1979	Average Annual	Incidence per 100,000 calls
Laryngotracheal disorders (excl. trauma)	10	4	7	23.17
"Lung infection"	0	3	1.5	4.97
Marine organism affliction	1	3	2	6.62
Meningitis	1	0	0.5	1.66
Muscular dystrophy	1	1	1	3.31
Myasthenia gravis	1	1	1	3.31
Myocardial infarction, acute	26	19	22.5	74.48
Near drowning	30	37	33.5	110.89
Noxious fume inhalation	21	13	17	56.27
"Old age"	2	0	1	3.31
Oxygen tank flow change	1	0	0.5	1.66
Palpitations	1	1	1	3.31
Paroxysmal nocturnal dyspnea	1	1	1	3.31
Pleural rub	1	0	0.5	1.66
Pleurisy	2	4	3	9.93
Pleuritis	4	2	3	9.93
Pneumonia	24	41	32.5	107.58
Pneumonitis	3	3	3	9.93
Pneumothorax	16	13	14.5	48.00
Poisoning*	2	0	1	3.31
Prematurity (infant)	1	0	0.5	1.66
Pulmonary edema	23	39	31	102.61
Pulmonary insufficiency	0	1	0.5	1.66
Pulmonary embolus	4	3	3.5	11.59
Pulmonary infarction	2	0	1	3.31
Pulmonary hemorrhage	0	1	0.5	1.66
Renal failure	10	6	8	26.48
Respiratory malfunction	0	1	0.5	1.66
Respiratory arrest	4	4	4	13.24
Respiratory & coronary insufficiency	0	1	0.5	1.66
Respiratory insufficiency	3	3	3	9.93
Scar tissue, pulmonary	1	0	0.5	1.66
Seizure/convulsion	8	8	8	26.48
Septicemia	2	0	1	3.31
S/P brain surgery	0	1	0.5	3.31
S/P tracheostomy tube removal, self	5	0	2.5	8.28
Strangulation	2	0	1	3.31
Stroke (See CVA)				
Syncope	1	3	2	6.62
Swallowed foreign object	1	0	0.5	1.66
Swelling, oropharyngeal	0	1	0.5	1.66
Trauma	24	26	25	82.75
Tuberculosis	0	1	0.5	1.66
Upper respiratory infection (URI)	35	31	33	109.23
Vasovagal syncope	1	1	1	3.31
Subtotals	1409	1213	1307.5	
Mixed (2 clinical impressions or more)	261	382	325	
Records not available	7	6	6.5	
Patient refused service	4	4	4	
Apparent miscoding	8	6	7	
TOTALS	1689	1611	1650	

\*=unspecified

Summary

Respiratory emergencies seen by City and County of Honolulu Department of Health Ambulance Services and their contract ambulance services were retro-

spectively reviewed and evaluated as to clinical impressions, annual averages, and incidence.  
The more common respiratory emer-

gencies were observed—asthma, bronchitis, COPD, dyspnea, emphysema, hyper-ventilation syndrome, pneumonia—as were cardiac problems and trauma. Malignancies frequently generated respiratory emergency calls. Allergies and anaphylaxis were important, as were noxious fume inhalations. Rarely, marine organisms induced respiratory emergencies.

Training in respiratory emergencies and their management remains important in ambulance technician training. It is recommended that differential clinical impression training be expanded (particularly auscultation), with emphasis on oncologic emergencies and noxious fume inhalation.

A comprehensive prospective and retrospective study on pre-hospital ground ambulance service respiratory emergencies statewide, with evaluations by island, could prove useful.

ACKNOWLEDGEMENTS

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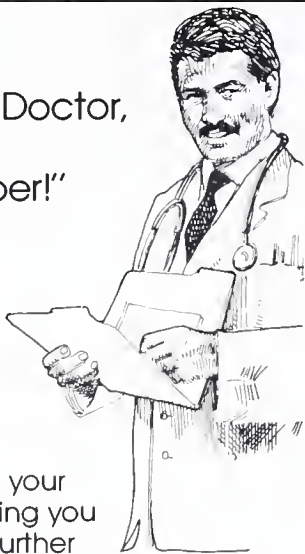
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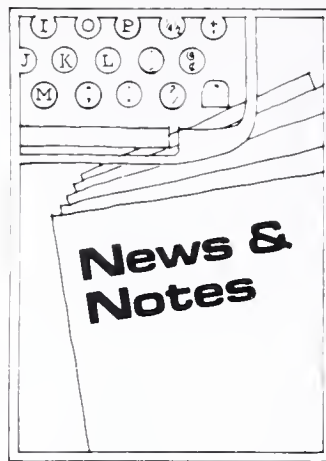
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Henry Yokoyama, M.D.

### Communication Gap . . .

Plastic surgeon **Ernesto Espaldo** was chief of staff of the Guam Memorial Hospital and a 3-term senator on Guam before moving to Honolulu. Ernesto relates the following anecdote: As the only plastic surgeon in the far-flung Pacific islands, he traveled far and wide . . . and observed that many physicians had Palauan wives . . . On one of his trips to Palau, he was operating as usual without the luxury of air conditioning . . . The day was unusually warm and humid . . . The attractive young Palauan OR nurse offered sweetly, "You like wife?" Ernesto almost dropped his scalpel, but his Barnes training held him steadfast and he said, "Why do you ask?" "Your sweat drip," the nurse replied as she "wifed" his brow with a moist towel . . .

### Life in These Parts . . .

"Dr. **Robert Flowers**, artist, author, poet, teacher and surgeon, has returned from Australia, where he was the keynote speaker at the convention of the Australasian Society of Aesthetic Plastic Surgeons . . . Flowers is an unusual doctor . . . Patients from around the world come to him, yet he's down-to-earth enough to print T-shirts for some of his patients that read: "Boobs by Bob" " (Don Chapman).

Kailua internist **John McDougall** feels that most people don't realize the role diet plays in disease . . . John says, "Rich foods make you sick." His three principles in "Making the Change" health care program are: "Anyone who is eating the American diet is not in good health . . ." His second tenet is "Healing and health are 'internal mechanisms' . . . Drugs, surgery and other medical interventions aid the healing process, but your body does most of the work. If your body has been kept in prime condition through proper nutrition, it has an easier time of healing." The third tenet is: "What you enjoy eating is entirely learned . . . You can learn to like food which supports your health." John and his wife, Mary, have put together a cookbook in which no meat, fat and salt are used . . . He is now working on the concept that diet can cure breast cancer and has a \$6,000 grant from Straub Hospital Foundation.

**Otto Neurath**, gerontologist, was criti-

cal of an Advertiser article by Pat McCormack entitled, "Hospitals opt not to revive some elderly." Otto feels that the public could easily conclude that motives other than the patients' well-being could influence the hospitals and their staff, e.g. whether to resuscitate or not to resuscitate. In most hospitals, every patient is given a copy of the "Patient's Bill of Rights," paragraph 4 of which reads: "The patient has the right to refuse treatment." "The so called 'living will' guarantees that the wishes of the terminally ill will in all cases be respected . . ." Otto also criticizes the point made that Catholic hospitals are more reluctant to apply the "No code." He says, "This is difficult to understand since Pope John Paul II, on June 26, 1980, made the following statement: "When inevitable death is imminent in spite of the means used, it is permitted in conscience to take the decision to refuse forms of treatment that would only secure a precarious and burdensome prolongation of life, so long as the normal care due to a sick person in similar cases is not interrupted." "

### Miscellany . . .

WHO officials concerned with the teeming population and poverty of Ceylon sent a team to distribute and demonstrate the use of condoms . . . The team returned a year later and found the birth rate just as vigorous as ever . . . The team members mulled over the problem until someone decided to ask a Ceylonese man how he used the condom . . . The Ceylonese placed the condom carefully over his thumb, just as the team demonstrators had shown him the year before . . . (As told by our tennis buddy, **George Suzuki**)

Kuakini ICU admitted a part-Hawaiian woman badly beaten by her boyfriend . . . The housestaff recorded the incident as a case of overzealous foreplay . . . (Another **George Suzuki** contribution . . .)

When a post-op patient complained of being constipated, urologist **Masaru Koike** prescribed glycerine suppositories. Several days later the patient returned for a follow-up visit, and Masaru asked if the suppositories had worked . . . It had worked all right, but the patient complained, "Hey, Doc, they were sure hard to swallow . . ."

Q. What's "iatronudia" mean?

A. Desire of a woman to expose herself to a physician on the pretext of being ill. This little quirk is rarely discussed, but doctors reportedly recognize it as quite common. (From Just Checking, by Lou Boyd)

Q. What happens if you don't pay your exorcist?

A. You'll be repossessed. (As told to Doris Jasinski by Ed Furukawa)

"Give me cash . . . Don't give me credit." (As told by our banker friend . . .)



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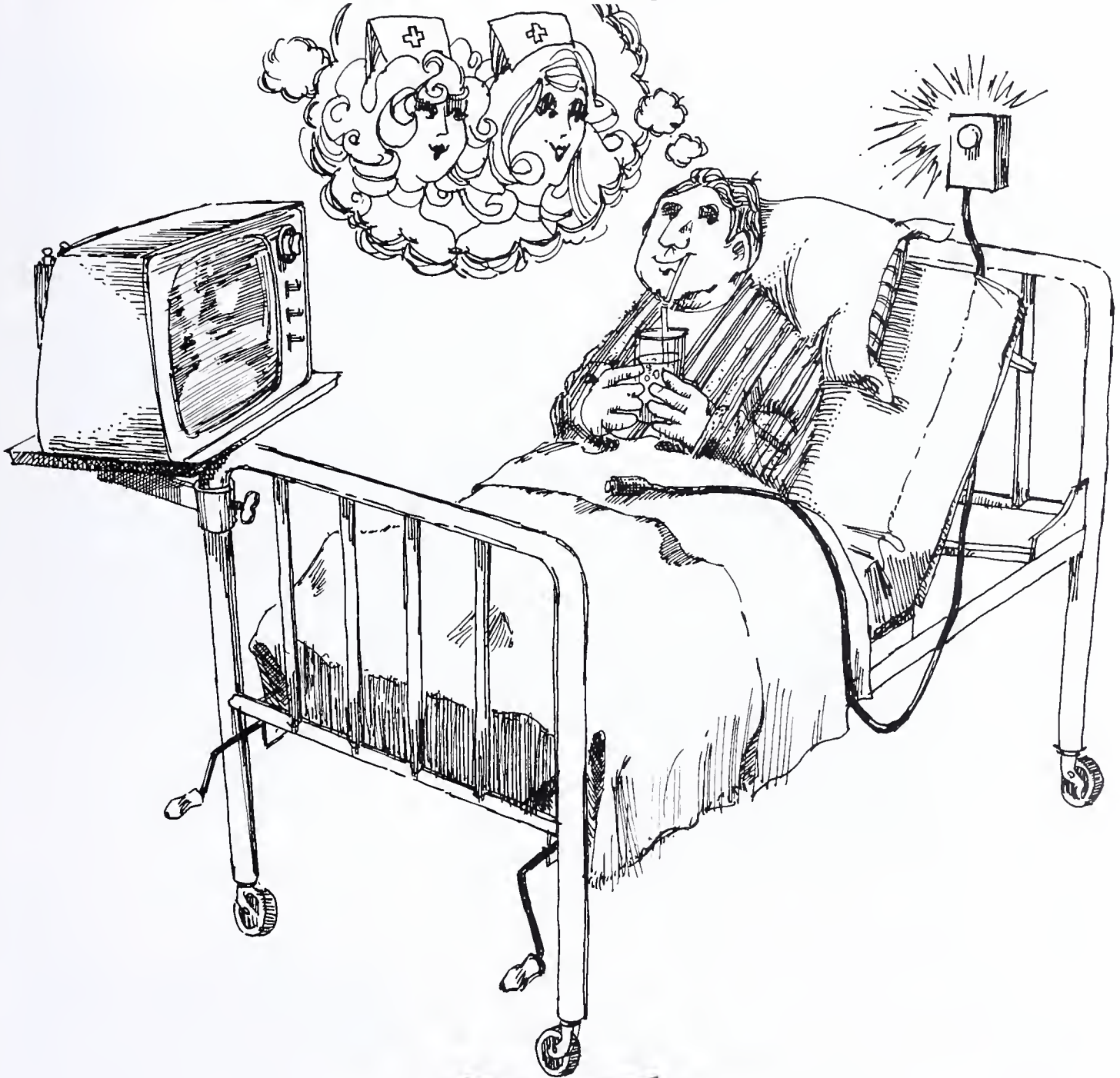
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#### Highlights, March 4, 1983, Meeting

- HMA maintains its position on no legislation for living wills.
- Emergency Medical Service was released as a party in the employment sex-discrimination case.
- A&T Printing, Inc., moved to 1020 Auahi St., giving them more space and 50% less rent. Within 6 months, A&T's future should be known.

• On the Ward Ave. HMA building, the agreement of sale will be due in 1985. Options are being considered by the Building Committee.

• HMA will defer any further action on PROs until after AMA's annual meeting in June, or after significant developments have been made toward program implementation.

• HMA Auxiliary President Carol McNamee reports Honolulu County's Annual Guest Day program was again well received. Conversion to "Annual Community Health Day" will be made next time.

• Nominating Committee gets the assignment to develop a method for elec-

tion of student and resident delegates to the HMA House of Delegates.

• Membership Benefits Committee approved a proposal of Diamond Head Jewels, a wholesale manufacturer, for custom-designed jewelry at 40-60% below retail, available to all HMA members.

• Medicare and Medicaid are converting their claims processing systems to AMA's CPT-4, for a national uniform coding system. HMA members and the HMSA Board of Directors will be encouraged to use AMA's CPT-4 in place of RVS.

• By-Laws Committee gets the assignment to draw up amendments reflecting the 1982 House of Delegates' action, making the Speaker and Vice-Speaker of the House members ex officio without vote.

• Kauai asks council to push for a district health officer for Kauai County. A letter is being sent to the Director of Health, expressing HMA's concern and encouraging appointment of a physician as health officer.

• For West Hawaii councilor for the remainder of the 1983 term, Dr. Robert Laird replaces Fred MacInnes, who moved to the mainland.

• MIEC plans seminars on loss prevention, including a program for an HCMS general membership meeting.

• Council ratified the appointment of the HAMPAC Board of Directors. There are now 43 members.

(A full copy of the minutes is available at HMA and county medical society offices for perusal by any member.)

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#### Convention, June 19-22

AMA Auxiliary 1983 Convention will be held at the Drake Hotel, Chicago. Hawaii will be represented at the convention by HMA Auxiliary President Carol McNamee. The convention will feature outstanding speakers, policy decisions, program ideas and educational sessions.

Hawaii is allotted 2 delegates and 2 alternates. Any auxiliary member who plans to be in the Chicago area during this time, please contact auxiliary secretary Irene Kodani Tuesday or Thursday mornings (536-7702) or Carol McNamee (373-3201).

#### Legislative Issues

At its December annual session, the HMA Auxiliary unanimously adopted a position statement supporting raising the legal drinking age in Hawaii from 18 to 21. In addition, the delegates voted to support an increase in Hawaii's penalties

*Continued on page 122*

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for drunk driving to meet the Federal criteria. **Betty Ghosh** (Hawaii County) had chaired the Auxiliary drunk driving task force. In January, the HMA Legislative Committee and the HMA Council both followed the Auxiliary's lead by voting to support raising the legal drinking age. In addition, the Legislative Committee voted to support stiffer penalties for drunk driving and to support an increase in education of the general public, police, judiciary, and the medical profession.

In the current legislative session, Senator Mary George and Representative Kate Stanley have introduced bills which, if passed, would change Hawaii's legal drinking age to 21. The Auxiliary's position paper pointed out that 20 states have now raised their legal drinking age and that an Insurance Institute study showed that, in 15 states having statistics available at the time the study was conducted, fatal automobile accidents in the 18-to-21 age bracket declined 28%. There are now only 4 other states besides Hawaii where the drinking age is 18 for any kind of alcoholic beverage. A few states allow the consumption of 3.2% beer by 18-year-olds.

Local statistics show that since 1973, an average of 15 drivers per year under the age of 21 have been involved in fatal accidents involving alcohol. Of fatal accidents, 38% in which the driver was under 21 involved alcohol.

The Auxiliary has been working with other community organizations interested in the drinking age issue, including the Coalition of Private Schools and the Junior League of Honolulu.

### No Ball for AMA-ERF

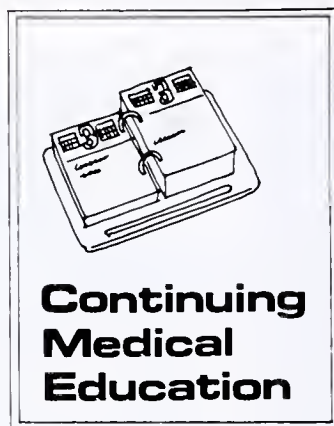
You already may have received your invitation to Honolulu County Auxiliary's fund-raiser for AMA-ERF to be held in April. Funds raised will be designated for the new Medical Student Assistance Fund at the medical school of your choice. Please read on to know how this fund will be put into effect. All doctors who give to their medical school annually should do so now to make this event a success. Donations will be submitted promptly and your contribution will be acknowledged.

### Postscript on Hawaii County Auxiliary's Fund-raiser

Hawaii County's Christmas party/auction, chaired by Marilyn Park, earned a hefty \$4,666.31 for the Hawaii County Medical Society scholarship fund. Assisting with decorations, registration and auction arrangements were Jean Caldwell, Jean Chen, Sylvia Hammer, Sue Irvine, Eung Sook Lee, Kathy Oldfather, Chung Park, Dorothy Wong and Georgianna Woo.

### Medical Student Assistance Fund

The American Medical Association Education and Research Foundation announces the establishment of new Medical Student Assistance Fund. This new program is quite different from the suspended Guaranteed Loan Program. The new Fund will accept gifts intended to assist medical students and will give the donors the added option of designating their gifts for a particular medical school.



### To Assist Blood Bank

A new and continuing community service project of the Honolulu County Auxiliary will be to assist the Blood Bank of Hawaii in several areas where help is needed. Many volunteers will be needed to make this project a success. Choose your area of interest to become a part of this vital program: Canteens; Community Education; Youth Education. Training will be provided by Blood Bank staff. Call Emily Callan, 373-2992.

### CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks."

### LOCAL ACCREDITED PROGRAMS ONGOING

For a complete list of ongoing programs, please refer to the April 1983 issue of the HAWAII MEDICAL JOURNAL. Further information regarding ongoing events is available through the individual institutions or through the HMA's CME Department.

### SPECIAL EVENTS

May 7-8, 1983	Association for Practitioners in Infection Control (APIC): Pacific Perspectives. Hilton Hawaiian Village Hotel. Contact: APIC, 23341 N. Milwaukee Avenue, Half Day, Illinois 60069. (312) 634-1403.
May 12-13, 1983	1983 Hypertension Conference. At: Ala Moana Americana Hotel, Honolulu Hawaii. Contact: Hawaii Heart Association, 245 N. Kuakini Street, Honolulu 96817. (808) 538-7021.
May 7-12, 1983	American College of Legal Medicine. At: Kona Surf Hotel, Big Island, Hawaii. Contact: B. Hanna, Executive Secretary, 213 W. Institute Place, Suite 412, Chicago, Ill. 60610.
June 13-15, 1983	University of California/San Francisco "Health Care Professionals in Management". At: Westin Ilikai, Honolulu, Hawaii. Contact: Harry Aiu, c/o Travel Planners, Inc., 2222 Kalakaua Avenue, Honolulu, Hawaii 96815.
June 18-25, 1983	USC School of Medicine-Ophthalmology. At: Mauna Kea Beach Resort, Big Island, Hawaii. Contact: Beverly Johnson, USC School of Medicine, 2025 Zonal Avenue, Los Angeles, Calif. 90033.
Aug. 13-19, 1983	USC School of Medicine-Post Graduate Refresher Course. At: Sheraton Waikiki/Royal Hawaiian, Honolulu, Hawaii. Contact: Beverly Johnson, USC School of Medicine, 2025 Zonal Avenue, Los Angeles, Calif. 90033.
Sept. 24-30, 1983	American Urological Association-New York Section. At: Sheraton Royal Waikoloa, Big Island, Hawaii. Contact: Arthur Tessler, M.D., 530 First Avenue, New York, N.Y. 10016.
Oct. 8-11, 1983	Hawaii Medical Association Convention. At: Hotel Inter-Continental Maui. Contact: Irene Wong, 320 Ward Avenue, Suite 200, Honolulu, Hawaii 96814.
Nov. 18-19, 1983	Diagnostic Imaging for the Clinician. At: Honolulu Academy of Arts Theatre, Honolulu, Hawaii. Contact: Rose Voulgaropoulos, 888 S. King Street, Honolulu, Hawaii (808) 523-2311, Ext. 8152.

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VOL. 42, NO. 6

# Hawaii Medical Journal

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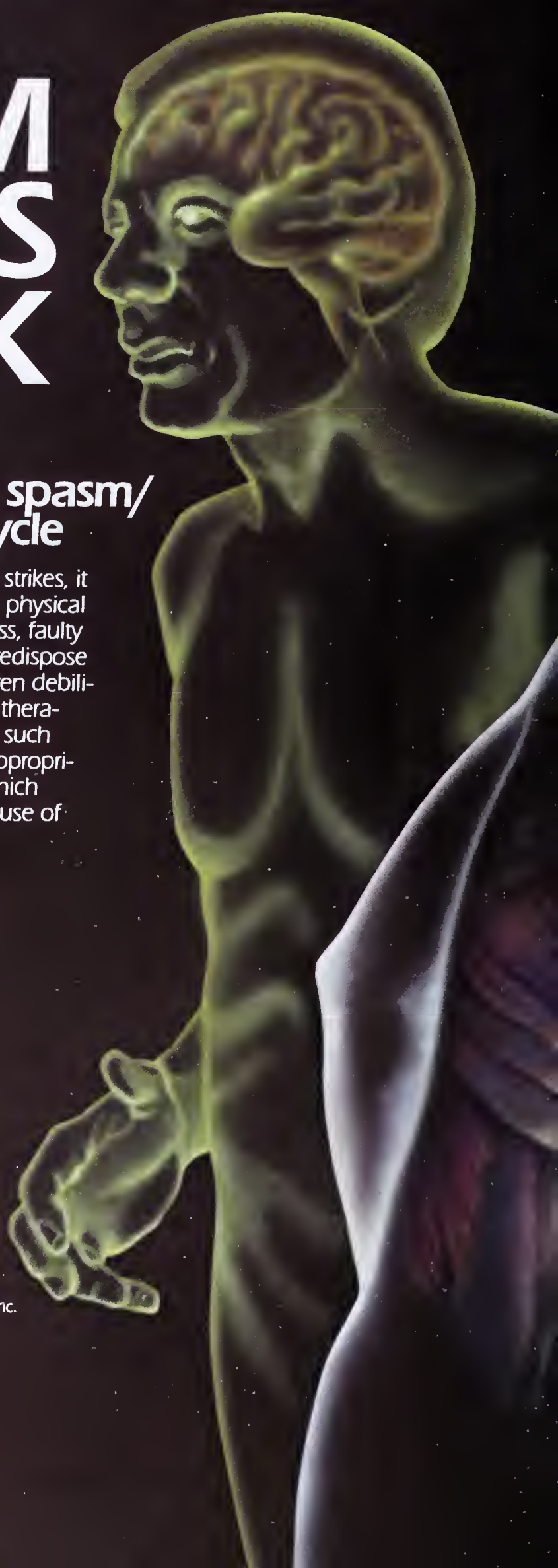


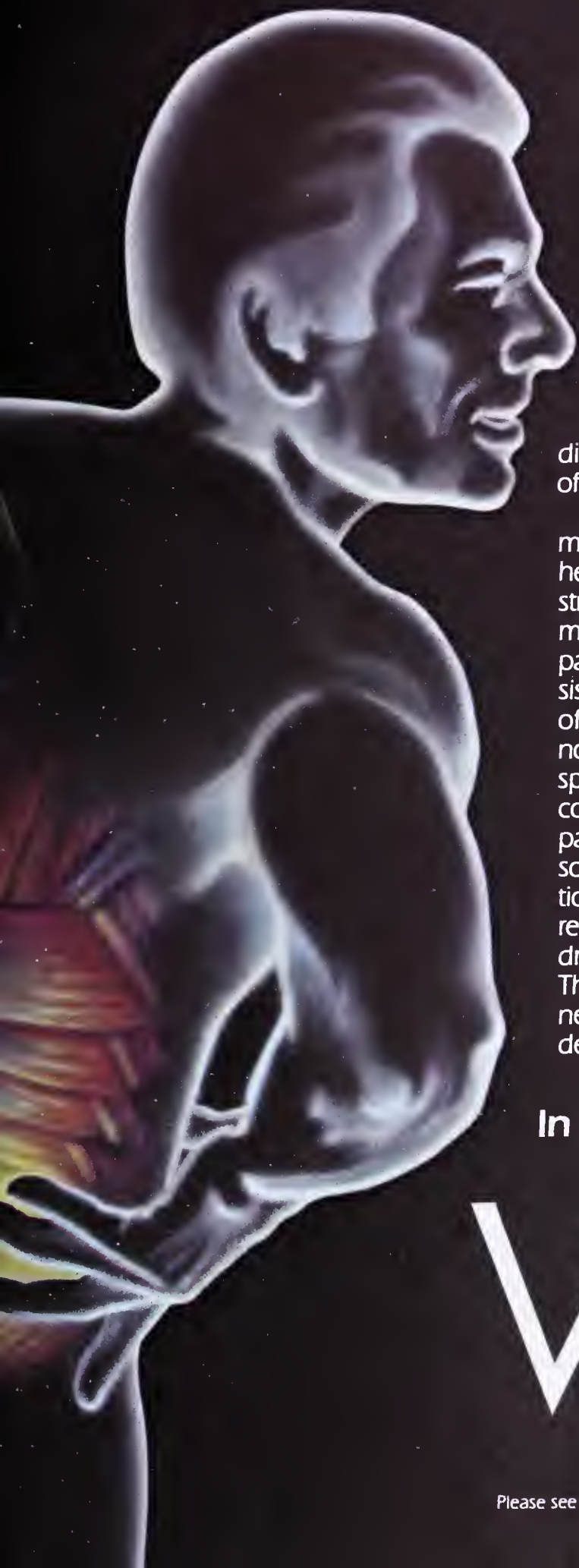
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The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindicated:** Known hypersensitivity to the drug. Children under 6 months of age. Acute narrow angle glaucoma, may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication, abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants. Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**Precautions:** If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies. Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation.

The clearance of Valium and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

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**Dosage:** Individualize for maximum beneficial effect. *Adults:* Anxiety disorders, symptoms of anxiety, 2 to 10 mg b.i.d. to q.i.d., alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed, adjunctively in skeletal muscle spasm, 2 to 10 mg t.i.d. or q.i.d., adjunctively in convulsive disorders, 2 to 10 mg b.i.d. to q.i.d. *Geriatric or debilitated patients:* 2 to 2½ mg, 1 or 2 times daily initially, increasing as needed and tolerated. (See Precautions.) *Children:* 1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use under 6 months).

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**References:** 1. Rankin EA. *Contin Educ* 3(1):46-50, Jan 1975  
2. When muscle spasm hobbles your patient. *Patient Care* 8(1):20-37, Jun 1, 1974.

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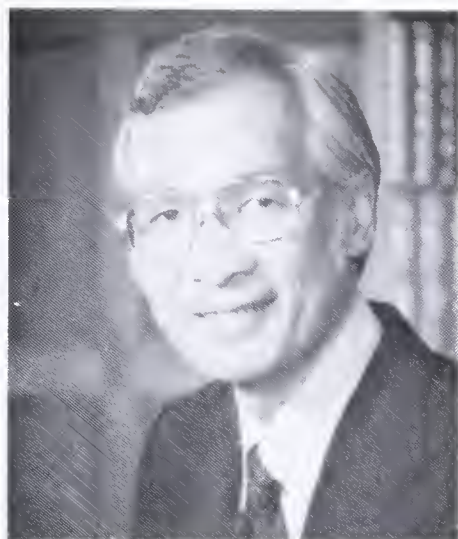
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## President's Message

### Politics

More than 20 years ago, during President Kennedy's election campaign, a TV ad was shown with an elderly couple sitting on their porch, claiming that, under new leadership, better medical care could be given through Medicare and Medicaid; elderly and welfare patients would be allowed to see private physicians of their choice.

As a resident at that time, this was of concern to me, as I believed politics would start to change the whole system of medical care. The elderly couple sitting on the porch could just as easily have sat in the many free clinics that were already in existence where house staff provided care under guidance of the best qualified physicians on the medical staff at hospitals and medical centers.

It was an honor for a physician to be selected as an attending physician for these clinics. To a resident, this was a fine system of providing care and contributed to medical education at the same time. Medical care should be the responsibility and privilege of physicians, and politics should not interfere.

The possibility that health care could be determined by political beliefs or whether your profession had contributed to the politicians' coffers; that the manner in which health care was to be provided would be governed by society instead was unheard of in the United States at that time.

The experience of the past 20 years has proven the Medicare-Medicaid system to be fallacious. Unfortunately, health care has been criticized continuously over these 20 years and increasing control has occurred.

This is despite the many major medical advances of the past 2 decades, for which there has been very little acknowledgment or gratitude. Increasing costs of health care insurance actually have been comparable to monthly increases for other services, such as electricity, water, and gasoline, but the clamor goes on.

Medicine has become involved in politics, and your AMA is in the forefront. Your views need to be presented. Locally, political involvement has been well demonstrated by the many health-care-related bills that have been submitted annually to the Hawaii legislature. Your HMA has monitored these bills and expressed your concerns.

Politics being what it is, however, special interest groups continue to attempt to legislate, rather than relying on public reputation, acceptance and support. This was demonstrated in the Senate Consumer Protection and Commerce Committee recently where mandatory chiropractic health care coverage was being pushed. After an afternoon at that hearing of excellent presentations from the insurance industry as well as from your HMA, no testifying chiropractor or chiropractic patient was ever asked the cost, effectiveness, and duration of such care or even why such coverage would have to be forced on all the consumers. This, of course, would include individuals who would never see a chiro-

*Continued on page 132*

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\*Shaw S, Lieber CS: Nutrition and alcoholism, chap. 40, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME; Philadelphia, Lea & Febiger, 1980, pp. 1220, 1237.

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**PRECAUTIONS:** *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

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## President's Message

Continued from page 130

practor. That bill was passed out unanimously without a vote even being taken that day.

At that point, it would have been easy to quit and recognize politics for what it is. Your HMA, however, did not quit: we made excellent efforts to communicate with the legislators. Many legislators will listen and are really concerned, giving time to the HMA to listen to our concerns. The chiropractic bill then failed a week later in the house. A lesson was learned. Legislators cannot be knowledgeable in all the various concerns and problems that society generates, supports and suffers from. Pertinent information must be provided to them and a chance to be heard requested. This chance has been amply given to your Association by these legislators. Many other bills affecting health care have been evaluated by our legislature and a summary of the legislative decisions will be sent to you.

Most physicians do not want to become involved in politics but, unfortunately, politics has made inroads into the system of providing medical care. Excellent health care has become a privilege and any deviation would be considered malpractice. Paying for such benefits, however, has met with reluctance.

This message has been presented primarily in support, appreciation, and thanks to the many legislators who have spent time listening to our concerns and who have considered our opinions in their deliberations.

Again, your help is requested to support activities of members of your Association who have diligently met with and communicated with our legislators. Thanks would be in order again to our members, Association staff, legislative committee, and concerned members who do spend time and visit with our legislators. Special thanks to Drs. Alan Kunimoto and Calvin Miura who continue to communicate with our legislators. Special thanks, also, to Dr. Roy Kuboyama, who took several days off from his practice to voice our concerns to our legislators.

## In Recognition

During the recent 26th Annual Hawaiian Science and Engineering Fair for intermediate and high schools, your Association was well represented by Drs. Michael Dimitrion and John Houk, who attended the awards ceremony and presented HMA awards to aspiring young scientists. It was great to see them on stage. Members should be interested in some of these excellent exhibits.

Excellent editorial articles in the Honolulu Star-Bulletin have appeared recently by Dr. Thomas Cahill, discussing Medicaid, and Dr. Milton Ackerman, regarding chiropractic. The efforts of Dr. James M. Swan, a radiologist from Louisiana State University Medical Center, refuting chiropractic charges against radiology teaching in medical school, were greatly appreciated.

Calvin C.M. Kam, M.D.  
President, Hawaii Medical Association



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# Neonatology— A Distressed Newborn

David Easa, M.D., Kenneth Kipnis, Ph.D., and James Drorbaugh, M.D., Honolulu

*In a very short time, neonatology and neonatal intensive care have emerged as a highly technical and sophisticated specialty capable of routinely caring for compromised newborn infants. The last 20 years have seen an explosion of knowledge concerning the physiology of the newborn infant, substantial technical improvements in the ability to monitor the fetus and newborn infant, and the development of new techniques to identify and correct birth defects. Neonates who most certainly would have died a few years ago are being regularly salvaged. Babies under 2 pounds and as young as 26 weeks gestational age can survive and have a good chance of normal neurological outcome.*

The pioneers of the subspecialty of neonatology are now senior physicians and their students are now in their 30s and 40s. New intensive care specialties may be following in neonatology's footsteps. Reflection upon some of the past and present concerns about this newborn medical specialty are in order.

## Historical Prospectives

The main interest in the development of the field of neonatology in the 1950s emerged from an interest in the physiology and pathophysiology of the newborn infant. Clement A. Smith's text, "The Physiology of the Newborn Infant,"<sup>1</sup> initially provided a focus of inquiry for those interested in this area of medicine. Although the book was scarcely more than a monograph in its early editions, the research applicable to each organ system was presented in some detail, followed by conclusions and clinical implications.

Research in disorders of the newborn led to interest in pulmonary physiology, since the most frequent problem causing morbidity and mortality in the low-birth-weight infant was hyaline membrane disease or respiratory distress syndrome (RDS). Although the stated purpose of the proposed research was to describe physiology and pathophysiology quantitatively, the benefits of such research were frequently obscure. The issue as to the safety of the investigation was never really resolved on theoretical grounds. Rather it seemed sufficient justification simply to show that it was possible to perform the research. In the end, it was these initial investigations that led to the development of the sophisticated life-support systems that neonatologists presently

take for granted.

Another issue significant to the development of neonatology during the 1950s was the gradual change in medicine's focus of concern. Since maternal mortality had recently been unacceptably high, the welfare of the mother was still the prime concern. But as pediatricians gradually edged into the nursery, the welfare of the newborn infant began to receive more attention. Obstetricians have since modified their practices so that now it seems their concerns are at least equally for the mother and the unborn infant. As the field of newborn medicine has progressed, diagnosis and treatment of maternal complications have become more sophisticated.

Since the field of neonatal intensive care has developed so rapidly, the pediatrician involved in the care of the newborn is only barely able to keep up with the inundation of new technical developments. There is rarely the luxury of time to envision the future we are creating.

## Interprofessional Approach Needed

The clearest general lesson that has emerged from the first years of modern neonatal intensive care is that there will arise extremely difficult non-medical issues in treatment decisions well beyond the experience and competence of the medical staff. One is reminded of the early experiences with "crash carts" when efforts to resuscitate were undertaken far more often than was justifiable.<sup>2</sup>

The availability of technology seems to carry with it a strong temptation toward overuse. Those caught up in the excitement of developing and learning to apply new tools are not always in the best position to appreciate the point at which it becomes reasonable to stop.

In neonatal intensive care, there are times when the likelihood of failure, the deficits anticipated even with "success," the costs of further effort (financial, emotional, physical, etc.) become so great as to raise the question whether continued

life-sustaining effort is justified, or whether it is permissible or even obligatory to desist.

Even when it is clear what the physician should or should not do, there is still the question of parental prerogative: the family may refuse to give permission for care that is required or it may request that something be done that is not in the child's best interests. In cases such as these, who is the proper decision-maker? The courts? The physician? The family? Which option should the medical profession support? Finally, there are questions that arise concerning how the severely compromised "salvaged" infant will be cared for. Are the resources available to ensure that the lives saved will be of value to those who will live them? What kind of life do we offer now? And what kind are we likely to offer in 10 or 50 years, when the patients we save today may still be alive?

Medical education does not equip physicians to handle these questions very well.

More often than we would have preferred, the issues have been explored in the courtroom or on the front pages, perhaps more thoroughly and with greater expertise than they have been considered in the nursery.

One answer may be to anticipate at the outset the issues that might arise and to organize neonatology so that legal, cultural, ethical and social questions can be addressed as routine matters. In practice, what this means is that the subspecialty would function within a constellation of other professions: law, social work, medical ethics, perhaps—in a place like Hawaii—even anthropology.

## Economic Accountability an Issue

Newborn intensive care currently costs Americans more than \$1.5 billion annually<sup>3</sup> and, in terms of individual bills, low-birth-weight infants seem to generate some of medicine's most astonishing

This work was supported in part by grants from the Hawaii Committee for the Humanities, the Cooke Foundation, the McNerny Foundation, and the University of Hawaii Foundation.



charges. A Los Angeles study<sup>4</sup> indicated the average hospital charge (excluding physicians' fees) for surviving infants weighing 1000 grams or less to be approximately \$42,900, adjusted to 1976 rate schedules. The total charges to produce one "normal" survivor was about \$93,700.

Until recently, it has seemed that physicians could carry out with full support whatever was medically indicated and someone would always be there to pick up the tab. The point is rapidly approaching at which this may no longer be true.

There is, in principle, no limit to the amount of technology that can be applied, the number of support staff that can be utilized, or the amount of money that can be spent, to sustain life a little longer and to improve marginally the chances of recovery; but, it is no longer news that resources are limited and that,

with medical costs rising above 10% of the GNP, the days of accelerating growth are numbered.

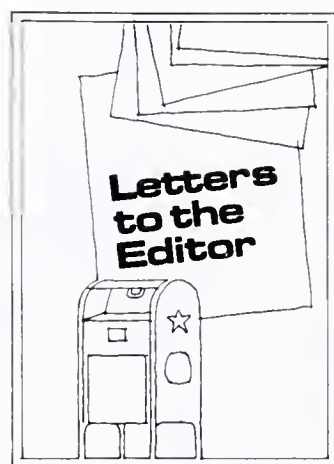
The debates in the 1960s and '70s concerned the role and responsibility of the medical profession in attending to medical malpractice. The medical profession did its best to hold back the tide of criticism and to counter the legal onslaught. Organized medicine's rear-guard actions were often futile. The remedies that were imposed from outside were perhaps not as effective, not as well-adapted to the requirements of responsible medicine as mechanisms we might have developed ourselves.

In the 1980s, an urgent need exists for the physician community to recognize that the cost of medical care presents a serious social problem that is to be dealt with one way or another, whether we like it or not; we must learn how to think about such issues and to participate in a constructive way in the emerging debate.

Presented are but a few of the past and present issues of neonatology. In a subspecialty dominated by new technology and new treatment protocols, some of these issues have only recently come into view. The challenge of the '80s and '90s will be to understand better the complexities of neonatology so as to control its destiny. Perhaps the lessons we are learning and the mistakes we have made will be instructive to other newly developing intensive care subspecialties.

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Editor:

The mortality rate from the first recognized subarachnoid hemorrhage (SAH) remains near 50%. Many (up to 70%) have had an earlier unrecognized bleed—"the warning leak."

There remains a need for increased awareness and thus early diagnosis of patients who have had a subarachnoid hemorrhage secondary to cerebral aneurysm leakage or rupture. Surgical therapy can be life-saving.

Bleeding from intracranial blood vessels into cerebrospinal fluid, causing a subarachnoid hemorrhage, has several major causes: hypertension; trauma; congenital vascular anomalies; aneurysms. The etiology can only occasionally be diagnosed accurately by history alone, i.e. trauma.

The patient with a subarachnoid hemorrhage needs early diagnosis and appropriate treatment. If the bleeding is from an aneurysm, this may only be diagnosed (proven) by CT brain scanning and/or cerebral angiography. It may be suspected after lumbar puncture. Hypertensive patients may also have aneurysms

that bleed.

The neurosurgical emphasis today is on very early confirmative diagnosis and early surgery for selected ruptured cerebral aneurysms.

As soon as the diagnosis of SAH is made or suspected, the patient would be admitted directly to or transferred to a neurosurgical intensive care unit for cerebral and cardiac monitoring, CT scanning and cerebral angiography, all to be performed optimally within a few hours after the hemorrhage. If surgery is felt to be appropriate, it may best be performed within the first 48 hours after hemorrhage.

The timing of surgery remains an individual clinical decision. The surgical goal is obliteration of the aneurysm by clipping or ligation, with preservation of all normal vessels. This can be curative. Many clinical factors will determine the appropriateness of early versus delayed surgical treatment, but currently the emphasis is on early surgery, before significant cerebral vasospasm can occur or aneurysms rerupture.

Thus, the patient, regardless of age, with a sudden or rapidly progressive headache, with or without loss of consciousness, and with or without significant nuchal rigidity, must be considered as having had a subarachnoid hemorrhage until complete prompt evaluation has been performed and no hemorrhage and/or aneurysm has been demonstrated.

I hope this "current concept" of a lethal but curable cerebrovascular disease (aneurysm) will be of value.

William M. Hammon, M.D.  
Department of Neurology  
and Neurosurgery  
Straub Clinic & Hospital  
Honolulu

Editor:

My attention was recently drawn to the article, "LSD—A Generation Later" (HMJ, December 1982). Having followed the pioneering work of Stanislav Grof (now of the Esalen Institute) and the corroborating observation of numerous other respected scientists and researchers in adjoining fields; having personally experienced LSD in a clinical context; and having shared the belief that LSD is a tremendously underrated and maligned tool for both ontogenetic and phylogenetic exploration, I heartily commend your perspicacity and professional courage for including such a thoughtful and personal article in your journal. Thank you!

Michael Gibson  
Graduate Student  
Boulder, Colorado

Dear Dr. Arnold:

I appreciated reading your editorial on rabies in the March 1983 issue of the HAWAII MEDICAL JOURNAL. Its timely arrival allowed for its use in a legislative hearing, requesting the exemption of guide dogs from the animal quarantine rules.

The epidemiology branch of the Department of Health publishes a quarterly newsletter entitled "Zoonoses." I would like to request permission to reprint your editorial in its entirety in our next issue.

Thank you for your consideration.

David M. Sakai, D.V.M.  
Public Health Veterinarian  
State of Hawaii  
Department of Health

Continued on page 137



## Wrapup on November 1982

### HMJ Festschrift for

### Dr. Arnold:

To Norman Goldstein, M.D.,  
Festschrift Editor:

Dear Norman:

It is a privilege to honor my dear friend, Dr. Harry L. Arnold Jr. A review of his achievements over a period of many years, which continue to this day, have established for him a permanent place as one of this generation's outstanding leaders of our specialty. I will limit my comments to only one of his numerous activities on behalf of dermatology, namely his tenure as a member and director of the American Board of Dermatology.

Harry was elected as a member and director of the American Board of Dermatology in 1967 and served in this capacity until 1976. He was vice-president in 1971 and president of the Board in 1972. His first year as an examiner coincided with an increase in the number of candidates which made it necessary to have 2 oral examinations rather than one each year, and the end of his term corresponded with the elimination of the orals and the substitution of an examination which provided for all candidates to respond to the same prepared questions following projection of kodachromes and examina-

tion of histopathologic sections. It was appropriate for Harry to have maximum involvement in the oral examinations during his years on the Board because he was a most effective examiner, with remarkable insight in evaluation of a candidate's knowledge of clinical dermatology. The more than 1500 candidates examined during these years will remember the courteous, professional, eminently fair manner of Harry Arnold.

I have great admiration for Harry Arnold and I treasure our close friendship of many years. He is very articulate, in fact to a degree which is not exceeded by many people and has extraordinary editorial and written communication talents.

Five days after Pearl Harbor, Harry and I took our Board examinations on the same day in New York; incidentally, both of us passed. Six years later, both of us were elected to the American Dermatological Association during the same year and we presented papers at the same meeting.

He has had a great impact on our specialty and, indeed, on medicine in general, over a period of many years and he is most-deserving of this special tribute which you arranged.

Sincerely,

Clarence S. Livingood, M.D.  
Executive Director  
The American Board  
of Dermatology, Inc.  
Detroit, Michigan

Dear Norman:

I was delighted to hear about the special issue planned for the 40th anniversary of Harry Arnold's editorship of the HAWAII MEDICAL JOURNAL. This editorship is only one of the very many activities in which Harry has been engaged which have contributed so much to advancing dermatology and medicine. A recent such contribution is the new edition of the Andrews-Dominkos textbook of diseases of the skin. However, I will not recount his many achievements and the many honors which he has received, since I know you did this in the special issue of the JOURNAL.

The Hawaiian medical community is to be congratulated on having such an outstanding member as Harry Arnold. I personally feel most fortunate to have had the opportunity to work with Harry on many organizational tasks in dermatology. Most important to me, however, is that Harry and Jeanne have been close friends of my wife's and mine for decades. We have enjoyed this friendship and we have greatly gained from it. We join you and your associates in celebrating this important anniversary, and we send our warmest congratulations to Harry.

Cordially,

Rudolf L. Baer, M.D.  
Professor of Dermatology  
New York U. Medical Center

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# Samoan Patterns in Seeking Health Services—Hawaii, 1979-81

Jon M. Cook, Ph.D., M.P.H., Paris, France

• *Since World War II, Samoans have been coming to Hawaii regularly to live, to visit, and as a step on their way to the Mainland. In the most recent count of Samoans in Hawaii, the 1980 census estimates the population at slightly over 14,000 people. Other estimates have between 15,000 and 20,000 Samoans living in Hawaii. Everyone agrees that Samoans travel a good deal and this makes counting a difficult task. The Hawaiian economy and housing situation place many Samoan families in the lower socioeconomic categories. Samoan competition in the job market is hampered by lack of both preparation and experience. In addition, stereotyping by other ethnic groups in Hawaii often portrays Samoans in such negative terms that employers may be hesitant to hire them. In all, Samoans find access to housing, food, and medical care to be continuing preoccupations.*

Medical practitioners in Hawaii identify Samoans as a group experiencing difficulties using modern health services. They are often new arrivals in Hawaii with little knowledge of the local medical system. Characteristically, they come to clinics and hospitals late in disease process, after much prior home treatment and treatment by folk practitioners. Modern medicine may be a "last ditch effort" in many cases. Because of this, the benefits of early case finding are not often enjoyed by Samoans.

A related complaint of practitioners and social service agencies is that Samoans may neglect ill family members. A fairly common opinion among physicians is that Samoans don't care about illness as do persons of other ethnic groups seen in their practice. Evidence for this assumption lies in the advanced nature of disease processes among Samoan patients when they are first seen in clinics and hospitals, compared with the expectations of practitioners. This is especially true of young children, who may be seen as helpless victims of parental unconcern and who often suffer from diseases whose course responds well to early intervention with appropriate therapy; for example, upper respiratory infections, otitis media, and impetigo.

## Method

To understand more about non-compliance and management problems in health facilities, I undertook a study of the health-service-seeking process among Samoans in Hawaii, as a NIMH Post-Doctoral Fellow in the School of Medicine at the University of Hawaii from 1979 to 1981. I talked with clinicians and observed Samoans in medical facilities. In addition, a Samoan research associate

helped in the development and administration, in the Samoan language, of an interview to 50 families living in the Honolulu area. Questions in the interview were based on a model of the health-service-seeking process described by Chrisman<sup>1</sup> and Kleinman.<sup>2</sup> Information was obtained on 43 recent illness episodes experienced by these 50 families, and covered symptom recognition, the lay referral process, treatments, outcomes, and beliefs about etiology. Respondents were given a short follow-up questionnaire during a second visit, dealing with their experience and evaluation of modern medical services.

## Case Reports

Because the sample of families was not chosen at random, some cases are presented which may not be representative of Samoans in Hawaii. Changes in names and some details will ensure confidentiality for the families who so generously cooperated with our project.

Case 1. Mele was 3 years old when she developed a rash on her face. The family first thought the rash was due to an allergy to milk or some food. The rash persisted and Mele's face became red and bleeding from her scratching. She became irritable, cried easily, did not want to eat and lost weight. She did not want to play, became withdrawn, wet her bed and had nightmares. The family was not worried at first, but since the illness didn't respond to home treatment they decided someone should be consulted and took her to a *fofo*, a traditional Samoan healer. There was no improvement with the first *fofo* so they took her to a second, and then to a Filipino healer, and then to a third *fofo* on the Mainland, and finally to a hospital in Hawaii, where the child was hospitalized (diagnosis unknown). Upon discharge, Mele returned home but the

rash came back, apparently in conjunction with the discontinuance of antibiotic therapy.

At this juncture, a minister was consulted to determine if the child's illness was related to any behavior of her parents contradictory to the teachings of their church. Under questioning by the minister, one of the parents confessed to an illicit relationship. After prayer and forgiveness of the parent, Mele's rash went away. The final act in the therapeutic process was to obtain a confession from the other partner in the affair, thus completing the steps necessary to reestablish proper social and spiritual relationships in the family which had been upset by the improper behavior of the parent.

Case 2. A single parent brought her baby into the emergency room of a Honolulu hospital late one night for treatment of lumps on the head and fever. During the examination of the infant by the admitting nurse, the mother felt the nurse was angry and scolding her. She saw the nurse rubbing the child's head in what she interpreted as a rough manner. When the mother was told the child would have to be admitted immediately and that the abscesses would have to be incised, the mother panicked and fled the emergency room (E.R.) with the child. The hospital notified the police, who could not locate the mother, so a report was sent to Child Protective Services.

After the mother left the E.R., she took her child home, where she and her oldest sister tried further treatments for the child's fever. Next day they took the child to a *fofo*, who rubbed the child with red ti leaves (*Cordyline* sp.) dipped in cool water to relieve the fever and applied an ointment on the abscesses. This proved only partially successful and the child was still ill when the C.P.S. workers escorted the mother, child and sister back to the hospital 2 days later. The mother was still quite upset but finally agreed to have her child admitted, after the attending physician carefully explained various medical reasons for such action.

Interviewed later about her visit to the E.R. and subsequent flight the first night, the mother explained that she had feared for her child's safety. She reasoned that if the nurse was angry at her, she might mis-

*Continued on page 140*

# An added complication... in the treatment of bacterial bronchitis\*



## Brief Summary Consult the package literature for prescribing information

**Indications and Usage** Cefclor® (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci). Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

**Contraindication** Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins); therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions:** General Precautions—If an allergic reaction to Cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antibody tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistix® tablets but not with Test-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy—Pregnancy Category B**—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers**—Small amounts of Cefclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefclor.<sup>1-6</sup>

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.<sup>7</sup>

# Cefclor®

## cefclor

Pulvules®, 250 and 500 mg

hour. The effect on nursing infants is not known. Caution should be exercised when Cefclor® (cefclor, Lilly) is administered to a nursing woman.

**Usage in Children**—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions** Adverse effects considered related to therapy with Cefclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy. Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain**—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic**—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematologic**—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal**—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

(061782R)

\* Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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Additional information available to the profession on request from Eli Lilly and Company, Indianapolis, Indiana 46285. Eli Lilly Industries, Inc., Carolina, Puerto Rico 00630.

300035



treat her child and it would be best to leave. Thus, her fears for her child, which had motivated her to take it to the E.R. initially, were only heightened by her interpretation of the attitudes and behavior of the E.R. staff, who may have been doing no more than scolding the mother for not having brought the baby in sooner.

These 2 cases help to illustrate the Samoan orientation towards illness and the modern medical system in Hawaii. Two issues I feel contribute most often to the problems discussed at the beginning of this paper will be explored: the Samoan concept of illness and treatment, and the social interactions which occur in medical settings between Samoans and staff.

### Samoan Health Behavior

Polgar,<sup>3</sup> in 1962, made an observation which still applies today, particularly in a multi-cultured society such as Hawaii with its constant flow of non-Western immigrants into and through the Islands:

"A common fallacy among 'scientific' health professionals . . . may be described by altering a little the biblical parable of the old wine and the new. The vessels in this instance are the clients of health action, and one cannot exchange them for new ones. Medical workers who wish to put the new wine of scientific ideas into these vessels often forget that they are not empty. Popular health culture is the wine that fills them, and ignoring this often results in spilling the new wine on the ground. Thus, one may refer to the *fallacy of the empty vessels*" (p. 165).

Health practitioners in Hawaii are often aware their clients are utilizing a variety of home remedies or seeing traditional healers (usually referred to collectively as "bush medicine"). How many are aware of the extent or importance to people of such practices?

The majority of Samoans in Hawaii have a good deal of confidence in a Samoan approach to illness. The reasons for this include the relative economic costs of Samoan versus modern medicine. Putting costs aside for now, I would like to focus on Samoan beliefs concerning the cause of illness. An understanding of beliefs about etiology will reveal the logic of the traditional treatment process, which I feel contributes so often to the delays of Samoans in utilizing modern medical facilities.

Respondents in the families interviewed gave 69 separate etiologic explanations for the 43 illness episodes they described. Common causes of illness cited were too much work, too little sleep, exposure to weather which was too cold or too hot, the consumption of certain

kinds of food, too much exposure to the sun, "bad blood," accidents, germs, and polluted air. Less frequently, and almost exclusively with cases labeled "serious," causes related to interpersonal frictions and moral issues were cited. These included failure to carry out an important social role properly (being a good husband, wife, child for example), disobeying an authority figure or God's laws, and disrespect towards family members and ancestors.

The initial treatment for illness was usually massage by an older family member, often an aunt of the patient. It has been suggested by McCuddin,<sup>4</sup> on the basis of interviews with Samoan healers, that massage functions by putting back into place, through directional stroking, the "life essence" (*to'oala*) of the patient, traveled from its normal location in the upper abdomen in the healthy person to various parts of the body where it may cause pain and other symptoms. Although McCuddin gives no reason for the displacement of the *to'oala*, my Samoan research associate has been told that the *to'oala* moves about when the stomach is empty from insufficient food intake. Diagnosis is made by palpating the stomach area until one can feel the pulsating of the *to'oala* as it moves. Patients with this condition are encouraged to eat, thus reestablishing the proper environment of the *to'oala* to reside in its normal place.

Other treatments were also aimed at reestablishing the ideal state which had been disrupted by imprudent behavior. (We lack sufficient data on herbal medicine and treatments to discuss them here. McCuddin<sup>4</sup> lists a number of Samoan herbal treatments but does not discuss theories concerning their effectiveness.) If overwork was blamed for an illness, rest and more sleep were indicated. A fever was first treated by rubbing the person with leaves dipped in cool water. A chest affliction felt to be caused by exposure to cold rainy weather was treated by rubbing the patient with Vick's Vaporub and keeping the affected part warm by wrapping it in soft cloth. The emphasis is on bringing the patient back to a normal state by counteracting the cause of the illness through the application of its behavioral or physical opposite.

In cases where friction between people or moral issues were felt to be the cause of the illness, treatments were aimed at reestablishing the proper relationships among family members, or between family members and God. The assumption was that the patient or someone close to the patient, such as a parent, had behaved in a manner which was offensive to a person living or dead, or to God, and illness was the punishment for this behavior. Treatments were not considered complete until all the people involved in the offense had confessed and apologized. Even in 2 accidents, respondents blamed the vic-

tims themselves for not having listened to their parents' warnings not to play in the street or climb in trees (one child was injured by a car and another by falling from a tree). This is consistent with a broader view of life shared by Samoans, placing responsibility on individuals for the consequences of their behavior. Punishment is the immediate and expected result of deviant behavior, and illness is a major form of punishment.

Young<sup>5</sup> found that a decision to seek help from the modern medical system often depended on the availability of traditional treatments for the symptoms.

Similarly, beliefs about the causes and most appropriate treatments for illnesses supply Samoans alternatives to modern medical treatment. These beliefs give them some feeling of control over their lives when faced with illness, because they have an explanation for the symptoms, a therapeutic solution for ending them, and guidelines for preventing illness in the future. They are treating not only the symptoms, but also the ultimate cause of the illness, as in Case 1. They are trying to solve the behavioral, social, or spiritual problems behind the illness to ensure remission of symptoms and prevention of a recurrence of illness related to the underlying cause. Perhaps most importantly, they are reestablishing a sense of harmony within the family. An illness episode is seen as a symptom that something is wrong with the way family members are interacting with each other or with the external physical and non-physical world. The fact that this explanatory model of illness has little biomedical validity does not detract from its internal logic nor its powerful influence on Samoan health behavior.

The Samoan illness model is important to understand because it affects the utilization of the modern medical system which, in turn, may influence morbidity and mortality in the Samoan population by delaying and interfering with effective treatment. Patients are brought to the attention of medical personnel in a worse state than would have been the case, had earlier intervention occurred or prescribed medicines not been discontinued. This, in turn, leads to the assumption the family is neglecting its members. As a result, medical personnel have difficulty concealing anger and frustration towards clients they see as willfully neglectful and uncooperative, as in Case 2.

Samoans, on the other hand, have no reason to feel guilty about having neglected their duty, since they have been trying various respected Samoan remedies and continue to do so as long as symptoms persist. They are left with the conclusion that medical personnel who are brusque and critical are being unfair and even racist. Case 2 is an extreme instance where fear, generated by misinterpretation of what the nurse was saying and doing, caused the mother to flee the



medical setting entirely and to come back only under threat of legal action.

It is understandable the physicians and nurses should feel frustration in dealing with such problems. Their training has focused upon early detection and appropriate, consistent treatment, according to the logic of biomedical science. However, it is generally counterproductive, in the context of the interaction with patients and family members, to criticize, blame or lecture Samoan clients. This is a task which falls to the authority figures in Samoan society: the family heads, the chiefs, and religious leaders. When it is attempted by people considered outside the proper sphere of authority, resentment is generated.

Thus, Samoans may avoid using modern medical facilities because they feel uncomfortable and distrustful of the medical staff. Staff members, in turn, view Samoans as neglectful, non-compliant and "difficult." A solution to this dilemma lies in education and "outreach," directed at two target populations: Samoans and medical personnel.

#### Issues Important to Physicians

The medical community needs to be aware that the Samoan approach to illness is not lacking in humanity so much as in efficacy. Samoans we talked with obviously care a good deal about illness in the family. They fear it and will go to extreme lengths to overcome it. This includes taking family members to clinics and hospitals when they would prefer to avoid these institutions.

Trust in the medical setting, for many Samoans, is not based on their acceptance of the biomedical model of disease. They have a comprehensive behavioral-moral theory of illness which would be difficult to replace with a biomedical theory, and perhaps unnecessary. Those Samoans who presently use modern medical facilities do so in spite of their beliefs about the basic cause of the illness. They come initially because they have not been successful using other forms of treatment. Their experience in hospitals and clinics is crucial to their future use of the modern medical system as a resource. It is here that medical personnel have an opportunity to influence Samoans positively towards modern medicine. Some of our research results show why this may be so.

The follow-up questionnaire given to respondents at our second visit asked 2 questions which dealt directly with people's experience of modern medical settings. The greatest problems cited by Samoans were fear of what was going to happen to them, and money, in that order. When asked what changes they would like in services, the most frequent responses were: 1) personnel should take more time to explain clearly about the illness and treatment, and 2) personnel

*Continued on page 142*

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should be more friendly.

While fear, money worries, and frustration with medical explanations are doubtless common experiences to many people entering a hospital, the perception of unfriendliness and even hostility from medical staff requires further exploration.

Samoans are very sensitive to formal aspects of interpersonal communication. Politeness, deference to age and authority, respect, and a friendly attitude are important to Samoans, especially in unfamiliar settings. On the other hand, the business-like manner of hard-working nurses, doctors and administrative personnel in the hospitals and clinics appear to be the antithesis of the Samoan ideal, and may confirm suspicions of prejudice and antipathy towards Samoans, attitudes which they experience in the community at large.

Because of this possibility for ambiguous messages, medical personnel should consider the importance of establishing social rapport as well as a professional relationship with Samoan clients. They may want to take the time to sit down with the head of the family to explain what is going to happen to the patient, why certain procedures are followed and what the outcome is likely to be. Regardless of whether these are understood, or even believed, the establishment of personal lines of communication in the medical setting can positively influence patients' behavior and reduce the distance between clients and care-givers.

It should be remembered that the head and main decision-maker in the Samoan family may be a father, grandfather, uncle, aunt, or some other relative of a patient. Because these people have the respect of other family members, they will be responsible in seeing that medical care is provided, and they should be the focus of explanation and instruction concerning a case. Young mothers in extended families are rarely able to make important decisions on whether to take a child to a hospital or not. The older family members need to be convinced the treatment is merited and effective before they give consent.

#### Issues Important to Samoans

The modern medical system is but one part of urban social organization which presents the recently-arrived Samoan family with difficulties. Housing, employment, and education also cause problems for immigrants from the rural economy of Samoa.

A crucial first step, especially when illness strikes, is to find out what resources are available, where they are located, who can be contacted and how to use the resource. While knowledge of the first three points may eventually bring potential patients to the medical service they need,

problems will arise because Samoans may not be aware of standard medical procedures to be followed in the hospital or clinic. Thus, medical personnel complain about Samoans and Samoans complain when they must be subjected to some common practices related to intake, examination, visiting rights, and so on.

Seemingly innocuous procedures, such as taking a family history, may upset Samoan clients who don't see the need for a lot of "nosy" questions when they have come simply for the treatment of symptoms. This resistance to self-disclosure has sound cultural reasons, but adds to the difficulty of the interaction between patients and providers in the modern medical setting where diagnosis often depends on an informative intake interview.

Westerners may abandon themselves with resignation to the prodding and probing medical staff. Some Samoans need more knowledge and confidence to relinquish control of themselves or family members to the awesome medical machine. Health education and outreach must cover all four points mentioned above. Besides telling Samoans how to find medical help, the setting itself must be demystified and explained if patients are to use it willingly and without fear.

#### Cultural Brokers

I have argued that the major barriers to the use of the medical system by Samoans are: 1) a comprehensive alternative system which explains illness and provides a wide range of treatments to deal with it, and 2) an aversion to the modern medical system resulting from negative experiences in medical settings, which in turn may be traced to difficult communication and unfamiliarity with administrative procedures in hospitals and clinics. Efforts should be directed towards creating the social networks and information resources which address the second set of barriers. Providing a positive experience when Samoans do employ modern medicine will encourage earlier intervention, better cooperation in the medical setting, and more adherence to treatment regimens when the patient returns home.

These objectives might best be accomplished by hiring staff into the delivery system to act as "cultural brokers" between the Samoan community and the medical community. These should be people who are sensitive to the needs of both communities and are able to explain one to the other. To do this, they must be accessible for consultations to Samoans and staff. Cultural brokers need training and job permanence to be effective.

This strategy will require financial commitment on the part of private and public health institutions. However, the cost should be more than offset by reduced medical care costs in the Samoan community, currently being carried by various public assistance programs, private insurance companies and Samoans

themselves. The difference in cost between one visit to a physician for the successful treatment of a rash, and a week's hospitalization for treatment of a generalized staphylococcal infection would pay the salary of a cultural broker for a month. How can we afford the difference in money and human suffering?

The time is past when we can blame the patient for not getting well because he or she didn't use the medical system correctly. This is especially unfair when used as a rationalization for morbidity in immigrant populations. Solutions are available if we are willing to look beyond traditional health care delivery systems and make room for non-traditional patients.

#### ACKNOWLEDGMENTS

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Harry L. Arnold Jr., M.D.

A medical diagnostic kit using a histamine antibody has just been produced by NMS Pharmaceuticals, Inc. (formerly Nuclear Diagnostic Systems). It is said to precisely quantitate basophil histamine release. Write to them at 1553 Monrovia Ave., Newport Beach, Calif. 92663, and say you saw it here!

\* \* \*

*Methaqualone (Quaalude or "ludes") vehicle-related deaths now constitute most of the deaths related to that dangerous "rec-*

reational" drug. A Florida study shows 106 such deaths in the past decade, plus 61 homicides and 68 deaths due to overdose, 28 of them suicidal.

\* \* \*

Ask the American Dietetic Association for "Food 2" and "Food 3," their 2 new pamphlets on combatting overweight and cholesterol, respectively. Their address is 430 N. Michigan Ave., Chicago, Ill. 60611.

\* \* \*

ECT—emission computed tomography—is apparently going to replace CT and CAT scanning. General Electric Co. offers an 8-page technical brochure which gives performance criteria, actual diagnoses, and efficacy experiments. Write them at Box 11944, Milwaukee, Wis. 53211-0944, and ask for publication 5434.

\* \* \*

Enzyme immunoassay for antibody to hepatitis B surface antigen was announced in January '83 by Abbott Laboratories; it's called AUSAB EIA. It comes in 100-test kits (List No. 89-24).

\* \* \*

If you don't see Science regularly, you might want to look at the February 11 issue, which is devoted to biological technology in general and advances in genetic engineering products in particular.

\* \* \*

The Luma Light Projection Pointer is different: you have a choice of any of 6 projected images: arrow left, arrow right, plus sign, circles, or a round dot. Visual Horizons, 180 Metro Park, Rochester, N.Y. 14623, supplies it. \$79.96 postpaid.

\* \* \*

Need to advise mothers about infant nutrition? Help is at hand: "Questions and Answers" is available from the Infant Formula Council, 5775 Peachtree-Dunwoody Road 500-D, Atlanta, Ga. 30342.

\* \* \*

A 3-day postgraduate course, Management of Acute Myocardial Infarction, will be presented June 23-25 in the St. Francis Hotel in San Francisco under the auspices of the American College of Chest Physicians. Dale Braddy, 911 Busse Highway, Park Ridge, Ill. 60068, has the details.

\* \* \*

Johnson & Johnson think highly of their super-absorbent Nu-Gauze sponges, cheaper and 47% more absorbent than the traditional cotton gauze sponge. Available in 2x2, 3x3, and 4x4 sizes. Ask for the Nu-Gauze General-Use Sponge.

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Lindane (Kwell) shampoo is safe for eradication of head lice, according to Lawrence Charles Parish of Philadelphia,

who recently reaffirmed James Rasmusen's statement to this effect.

\* \* \*

Zyderm II Collagen, a more concentrated second-generation version of Zyderm I Collagen Implant for injection beneath depressed scars and wrinkles, has just been announced.

\* \* \*

Doing ultrasound examinations? You should know that Phillips has introduced their new SDU 3000 Series, and also what real-time, servo-sector, linear array, cardiac (that means heart), Doppler, and static B-scan capabilities mean. It weighs only 280 pounds. Alan Highley, 2722 S. Fairview St., Santa Ana, Calif. 92704 will tell you all about it.

\* \* \*

Ophthalmologists take note: low-contrast visual acuity can now be tested with American Optical's new Contrast Sensitivity System; ask Bonita Maddox-Douglas at 14 Mechanic St., Southbridge, Mass. 01550 for details.

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Zero-Order Release Aspirin (ZORprin) is announced by Boots Pharmaceuticals for treatment of arthritis. It's a cheaper product than the others that minimize gastric irritation.

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Keep up with your patients' knowledge about drugs with the U.S. Pharmacopoeia's new edition of "About Your Medicines," just published.

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Call the local Hewlett-Packard office if you're interested in making better use of your Hewlett-Packard HP 4700A Page-Writer cardiograph: they are starting a series of physician-written "Clinical Notes" on its applications to assess patients who have had a myocardial infarct. They're free.

\* \* \*

HP is also putting out a new series of publications on ultrasound technology called "New Cardiac Imaging System for the Advancing Echocardiographer."

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General Electric offers a system information package for their Digital Fluoricon 3000 X-ray system. Write them at Box 11944, Milwaukee, Wis. 53211-0944.

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Sequoia-Turner Corp. presents a high-performance spectrophotometer for under \$1,100. Model 340 covers all routine colorimetric tests. The address is 755 Ravendale Dr., Mountain View, Calif. 94043.

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The same firm (Sequoia-Turner) also offers a low cost microcomputer-controlled hematology analyzer, C11-Dyn 700.

\* \* \*

Bac-T-Screen, for rapid detection of bacteriuria, has been approved by the FDA and will soon be available. Speed and low-cost are claimed for it. Marion Laboratories will market it.

\* \* \*

Emphysema sufferers may be helped soon by the increased availability of alpha-1 antitrypsin, which is now being produced through genetic engineering, according to Cooper Laboratories, 3145 Porter Drive, Palo Alto, Calif. 94304. Don't expect it to be marketed for a year or two yet, however.

\* \* \*

Judith A. Bertsch, MA, MT (ASCP) SBB, an education specialist with the Blood Bank of Hawaii, is co-editor of the just-published educational manual, "Selecting Policies and Procedures for the Transfusion Service," according to an announcement by the American Association of Blood Banks.

<

Limericks

An accident really uncanny  
Befell a respectable granny;  
She sat down in a chair  
While her false teeth were there  
And bit herself right in the fanny . . .  
Cosmo Monkhouse

A maiden at college named Breeze  
Weighed down by B.A.'s and Litt.D.'s  
Collapsed from the strain  
Alas, it was plain  
She was killing herself by degrees . . .  
John Straley

An old maid in the land of Aloha  
Got wrapped in the coils of a boa  
And as the snake squeezed  
The old maid, not displeased  
Cried: "Darling! I love it! Samoa!"  
Norman Douglas



# The Dexamethasone Suppression Test in Depressive Illnesses

Richard A. Markoff, M.D., Honolulu\*

Of all psychiatric disorders, depression is the most frequent. It is commonly seen in non-psychiatric practice, and its treatment is not simple. The problem is that depressed patients are a heterogeneous group and no single treatment is effective for all of them. Anti-depressant drugs are not universal "mood elevators." Complicating the picture are depressions in which the cardinal symptom of depressed mood (despondency) is relatively inapparent; the so-called masked depressions which present most often with somatic symptoms. Anything which could help in diagnosing depressive disorders, and in predicting which patient is likely to respond to a particular treatment, would be welcome. The dexamethasone suppression test (DST) is such a measure.

The level of circulating cortisol is regulated by negative feedback: high cortisol levels act upon the anterior pituitary to decrease ACTH production and release. This, in turn, lowers the output of cortisol by the adrenal cortex. Low cortisol levels have the opposite effect. A further source of control over cortisol levels resides in the hypothalamus, and associated limbic centers. These structures are generally thought to exert a varying, tonic inhibition on pituitary ACTH output.

In some depressed patients, there are abnormalities of cortisol regulation. Excessive cortisol secretion, alteration of the circadian rhythm of cortisol release, impaired response to lysine, vasopressin and hypoglycemia, and impaired suppression with dexamethasone have been observed.<sup>1</sup> These abnormalities appear to be characteristic of depression and not the effects of stress or other non-specific factors. They are present during the depressive state and revert to normal with clinical remission, whether spontaneous or treatment-induced.<sup>2</sup>

One may generalize that there is, in depressed patients whose cortisol regulation is impaired, an activation or disinhibition of the hypothalamic-pituitary-adrenal axis (HPA). Presumably, this reflects dysfunction of those limbic and hypothalamic centers which modulate ACTH output. Since limbic regions are thought to be involved in emotion, it is plausible that there should be some correlation between derangements of mood and of HPA function.

## Protocol, Criteria, and Exclusions

Dexamethasone non-suppression has been the best studied of the several in-

dices of HPA derangement. The DST is reliable and easily tolerated; and since it is already widely used in clinical endocrinology, it is generally available.

The recommended protocol for DST,<sup>3</sup> as applied to depressive illness, is as follows:

1—Administer 1 mg of dexamethasone orally between 11 p.m. and midnight.

2—Obtain plasma cortisol at 4 p.m. the following day, and again at 11 p.m., if practical. A positive result is a cortisol value of 5 mcg/dl or above; 4 mcg/dl or less is a clearly negative result. Values between 4 and 5 mcg/dl are transitional and must be interpreted cautiously.

The timing of the plasma cortisol sample is important. In many depressed patients, there is not a total failure to suppress cortisol after dexamethasone so much as an early escape from suppression. Non-depressed individuals show suppression for a full 24 hours.

## Interference with Results

There are a number of conditions and drugs that interfere with the DST.<sup>3</sup> False positive results may be produced by:

- 1—Pregnancy; high-dose estrogens
- 2—Cushing's disease or syndrome
- 3—Weight loss (severe) and malnutrition: body weight <80% of ideal weight
- 4—Major physical illness; trauma; fever and dehydration; nausea
- 5—Alcohol withdrawal (acute); probably also other sedative withdrawal
- 6—Uncontrolled diabetes mellitus (acidosis)
- 7—Hepatic enzyme induction (recent use of phenytoin, barbiturates, meprobamate)
- 8—Possibly: reserpine; narcotics; temporal lobe seizures

The following are associated with false-negative results:

- 1—Addison's disease; corticosteroid therapy; hypopituitarism
- 2—High dose benzodiazepine therapy (> 25 mg/day of diazepam, or equivalent)
- 3—Possibly: cyproheptadine

Finally, endocrine disorders other than those mentioned, and spironolactone therapy may affect the DST, but the nature and direction of the effect is uncertain. Psychotropic agents have not been shown to alter the DST. This includes anti-depressant drugs, barring the point that the DST reverts to normal with successful anti-depressant therapy.

## Diagnostic Significance

Depressed mood may develop when a person suffers losses, reverses, or injuries

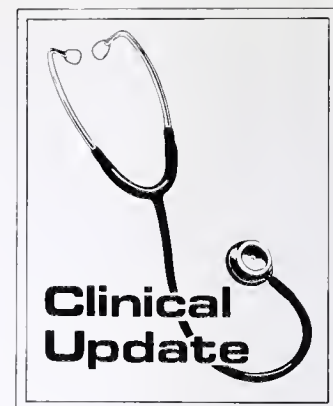
to self-esteem. When the depressed mood significantly outlasts the situation in which it arose, and is accompanied by disturbances of sleep and activity, appetite, concentration, and the ability to experience pleasure or feel interest, a depressive illness exists. Sometimes a depressive illness—depressed mood and associated symptoms—develops without apparent provocation. Atypical depressive illnesses exist in which a very chronic depressed mood is the main feature and the associated symptoms are mild or inconstant. The category, "patients with depressed mood," is thus quite heterogeneous and does not represent a diagnostic entity.

If one focuses on those patients who present both depressed mood and associated symptoms—whether or not precipitated by external events—one has a more homogeneous grouping. Among these patients are some in whom loss of the ability to feel pleasure is particularly severe and pervasive, and in whom the dysphoric mood may have a particularly unpleasant and abnormal quality. They also may show very marked changes in appetite, activity level, and sleep, with early morning awakening and depression worse in the morning. The designation, melancholia, is given to this severe depressive picture.<sup>4</sup>

A positive DST—if all the listed, interfering conditions are excluded—is highly specific for melancholic depressive disorder. The specificity, with the stated cortisol criterion value of 5 mcg/dl, has been estimated at 96%; only 4% of normal persons and patients with other psychiatric diagnoses have positive DSTs.<sup>3</sup>

Owing mainly to this high specificity, the diagnostic confidence in a positive DST is about 94%. The sensitivity of the test has been estimated to range from 58% for out-patients to 67% for in-patients, the difference being largely attributable to the omission of the 11 p.m. cortisol sample in usual out-patient practice.<sup>3</sup> Thus, a considerable number of "melancholic" patients have negative DSTs. This testifies to the heterogeneity of depression, even when relatively tightly defined on a clinical basis.

The diagnostic importance of the DST is that it may, if positive, confirm the suspected melancholic depression. A negative result, however, does not rule out the



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diagnosis. Since melancholic depressions tend to respond to anti-depressant drugs and to electroconvulsive therapy, a positive DST would increase one's confidence in prescribing and persevering with such treatments. Prognostically, the DST also can offer some help in that reversion to normal of a previously positive result would confirm the clinical impression of a remission.

Some workers divide depressive illness into "primary" and "secondary" categories. The latter consists of those depressions which follow, or develop in the course of non-affective psychiatric illnesses, such as anti-social personality disorder, alcoholism, "hysterical" disorders, and schizophrenia. The DST appears to be positive most often in primary depressions, and only rarely positive in secondary ones.<sup>5,6</sup>

At present, the DST cannot be used with assurance to select the anti-depressant drug most likely to work well in a given case. Nevertheless, there are studies which seem to support the idea that a patient whose DST is positive may respond best to a drug which blocks the reuptake of serotonin.<sup>7,8</sup> In general, tertiary amines, among the tricyclic anti-depressant drugs, have this effect. However, much more work needs to be done before differential drug indications are clear.

The DST is the first widely available diagnostic laboratory test in clinical psychiatry. Psychological (psychometric) tests are not comparable, since they are a species of standardized interview and behavioral observation, and are more closely related to the psychiatric interview. Undoubtedly, other tests will follow. The TRH test (thyrotropin response to thyrotropin releasing hormone) is already receiving attention in the sphere of depressive disorders, as are urinary 3-methoxy-4-hydroxyphenyl glycol (MHPG) and other metabolite levels.<sup>8</sup> This trend can only benefit psychiatric practice by leading to increased diagnostic precision and more predictable treatment outcomes.

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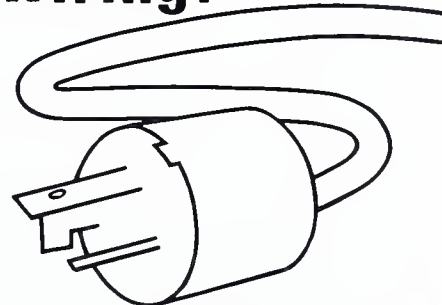
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than 550 calls came in from Oahu, Maui, and Hawaii. The Auxiliary has sent letters to all callers and hopes to hold meetings on each Island. By bringing concerned citizens together, the Auxiliary intends to create an informed body of people to fight the problem of drunk driving in Hawaii. If there is enough interest and commitment, a local chapter of M.A.D.D. may be formed.

The HMA Auxiliary has adopted the fight against drunk driving as a project for 1983. Auxiliary Council members will be planning an educational and legislative program. Bills to raise the drinking age and to stiffen penalties for drunk driving, not passed in the legislature this

year, will carry over to the 1984 session.

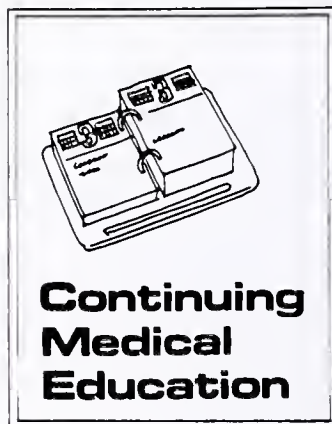
Any member interested in helping with the drunk driving project should call the Auxiliary secretary, Irene Kodani, at 536-7702 (Tuesday or Thursday mornings) or Carol McNamee (373-3201).

\* \* \*

The Auxiliary to the Honolulu County Medical Society held a bake sale in April at the Hawaii Medical Library, raising more than \$200 to benefit the library.

\* \* \*

The Medical Student Assistance Fund gifts to the schools will be restricted to financial aid for medical students.



## CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Asterisked programs also are accredited for AAFP prescribed credit.

### LOCAL ACCREDITED PROGRAMS ONGOING

For a complete list of ongoing programs, please refer to the April 1983 issue of the HAWAII MEDICAL JOURNAL. Further information regarding ongoing events is available through the individual institutions or through the HMA's CME Department.

The following are changes to the April 1983's calendar:

### REVISED SCHEDULE

#### Straub Clinic & Hospital

1. Cardiac Surgery Conference, Fourth Tuesday, 4:30-5:30 p.m., Doctors' Dining Room.
2. Clinical Immunology Update, First Tuesday, 7:30-8:30 a.m., Doctors' Dining Room. 1 hr. CME credit.
3. Community Peripheral Vascular Conference, Third Thursday, 5:00-6:30 p.m., Doctors' Dining Room.
4. Department of Anesthesiology, Second Tuesday, 7:00-8:00 a.m., Doctors' Dining Room.
5. Friday Noon Conference, Every Friday, 12:30-1:30 p.m., Doctors' Dining Room. 1 hr. CME credit.
6. Medical Morbidity and Mortality Conference, Third Wednesday, 8:00-9:00 a.m., Doctors' Dining Room. 1 hr. CME credit.
7. Neuropathology Conference, Fourth Saturday, 8:00-9:00 a.m., Doctors' Dining Room. 1 hr. CME credit.
8. Patient Care Conference, formerly Straub Professional Seminar, Second Tuesday, 5:00-6:00 p.m., Doctors' Dining Room. 1 hr. CME credit.
9. Surgical Mortality and Morbidity Conference, Fourth Thursday, 7:00-8:00 a.m., Doctors' Dining Room.
10. Visiting Professor Conference, meets periodically on Thursday, 7:00-8:00 a.m., Doctors' Dining Room. 1 hr. CME credit.

\*Note: All conferences subject to change. Monthly calendar will be available upon request.

### SPECIAL EVENTS

June 13-15, 1983	University of California/San Francisco "Health Care Professionals in Management." At: Westin Ilikai, Honolulu, Hawaii. Contact: Harry Aiu, c/o Travel Planners, Inc., 2222 Kalakaua Avenue, Honolulu, Hawaii 96815.
June 18-25, 1983	USC School of Medicine-Ophthalmology. At: Mauna Kea Beach Resort, Big Island, Hawaii. Contact: Beverly Johnson, USC School of Medicine, 2025 Zonal Avenue, Los Angeles, Calif. 90033.
Aug. 13-19, 1983	USC School of Medicine-Post Graduate Refresher Course. At: Sheraton Waikiki/Royal Hawaiian, Honolulu, Hawaii. Contact: Beverly Johnson, USC School of Medicine, 2025 Zonal Avenue, Los Angeles, Calif. 90033.
Sept. 24-30, 1983	American Urological Association-New York Section. At: Sheraton Royal Waikoloa, Big Island, Hawaii. Contact: Arthur Tessler, M.D., 530 First Avenue, New York, N.Y. 10016.
Oct. 8-11, 1983	Hawaii Medical Association Convention. At: Hotel Inter-Continental Maui. Contact: Irene Wong, 320 Ward Avenue, Suite 200, Honolulu, Hawaii 96814.
Nov. 18-19, 1983	Diagnostic Imaging for the Clinician. At: Honolulu Academy of Arts Theatre, Honolulu, Hawaii. Contact: Rose Voulgaropoulos, 888 S. King Street, Honolulu, Hawaii (808) 523-2311, Ext. 8152.

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JULY 1983  
VOL. 42, NO. 7

# Hawaii Medical Journal

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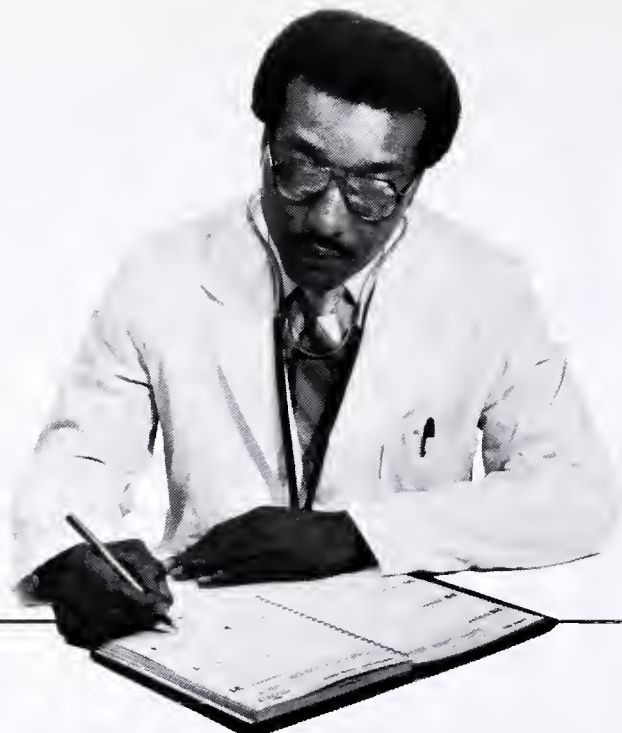
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Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion.

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindications:** Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**ORAL.** Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

**INJECTABLE.** To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used I.V.: inject slowly; taking at least one minute for each 5 mg (1 ml) given; do not use small veins, i.e., dorsum of hand or wrist, use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea; have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

**Precautions:** If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, i.e., phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over sedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**INJECTABLE.** Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

**Adverse Reactions:** Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depres-

sion, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

**INJECTABLE:** Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

**Dosage:** Individualize for maximum beneficial effect.

**ORAL Adults:** Anxiety disorders, relief of symptoms of anxiety—Valium tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

**Geriatric or debilitated patients:** Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

**Children:** Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

**INJECTABLE.** Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added (See Warnings and Adverse Reactions.) For dosages in infants and children see below; have resuscitative facilities available.

**I.M. use:** by deep injection into the muscle.

**I.V. use:** inject slowly; take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children administer I.V. slowly; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful. In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

**Management of Overdosage:** Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, I.V. fluids, adequate airway. Use levaterenol or metaraminol for hypotension. Dialysis is of limited value.

**How Supplied:**

**ORAL** Valium (diazepam/Roche) scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100; Prescription Paks of 30.

**INJECTABLE** Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.





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## President's Message

### A time to evaluate and direct your association

When the House of Delegates meets in Honolulu, distractions occur from phone calls and emergencies. This October 8-10, when our annual meeting will be held at the Intercontinental Hotel on Maui, offers a unique opportunity to handle the affairs of our association with less distraction. All delegates are urged to attend or give your alternates time to plan for this important session. You are requested to review the annual reports prior to the meeting and be prepared to evaluate each committee report, concentrating on the functions, goals, and effectiveness of each committee so that your association can become more cost effective and efficient. New ways to serve and support our membership should also be considered.

This will also be an opportunity to meet with your colleagues without outside distractions and to devote more time to the affairs of your association. You will be proud of the effort once you become dedicated to this goal.

For the membership, an excellent scientific program has been planned featuring infectious disorders of concern to most physicians. This was planned by your scientific program committee with excellent support from the pharmaceutical companies.

Those of you who attend should participate in the deliberations of the various committee hearings of your House of Delegates and listen to the subsequent decision-making activities when the House reconvenes. Hopefully these activities will encourage you to participate more in your association and to appreciate its efforts.

### So you want to be a doctor

In a recent AMA newsletter, the cost of modern medical education was discussed, being as high as \$200,000. The cost of starting a new practice ran as high as \$50,000 to \$100,000 and the majority of medical graduates were at least \$20,000 in debt when starting practice. (AMA Department of Resident Physician Services.)

New members who attended a recent get-together here were interviewed. Seven physicians had recently started practice. Most ranged from 29 to 32 years when they started practice but the surgical specialist was older.

The cost of medical education could be minimized by going to the University of Hawaii where tuition has increased but the cost is still maintained below \$10,000 for the four years. Going to a private institution, however, increased the cost to \$20,000 to \$30,000 for the four years. At present, medical students are charged about \$15,000 a year now at private institutions.

The cost of setting up practice varied, however, with loans necessary from \$30,000 to \$60,000 while others have benefited by joining group practices. The cost of malpractice insurance varied from \$1,200 for a psychiatrist, to \$1,600 to \$2,500 for internists, and up to \$12,000 for an orthopedic surgeon.

The cost of becoming a physician and providing health care has continued to increase and probably will continue.

Surviving in a society that continues to clamor about the cost of health care, however, will be difficult. The cost of health care is presently about 10 percent of the gross national product, of which about 18 percent would be due to medical fees. This has not changed much and has generally increased with the consumer price index over the past 12 years. Hospital costs, however, have increased markedly, despite a recent claim by health insurance carriers that the rate of hospitalizations has slowly diminished with time.

Your salaries were recently summarized in the April 1983 issue of *Medical Economics*. This was for the year 1981 when the median net income for all physicians was \$86,210. Surgical specialists earned more, but, of course, spent more time in training and were older when they started practice.

Of interest, the average office expense for all physicians was \$44,800. The median number of patients seen per week was 108 and hours worked were 60. A comparison of your salaries, efforts, risk, and expenses should be done with other professions so that cost and compensation could be better appreciated. Appreciation, however, has not materialized.

In 16 years of neurosurgery practice here, scientific achievements have drastically changed practice. While much time was spent doing pneumoencephalograms, arteriograms and myelograms in the past, these efforts and costs have been drastically reduced by the use of C.T. scans that can be easily done on outpatients and do not require hospitalization.

Social pressure, however, through SHPDA has been to limit and control the quality of care provided here. Expenses actually increased because of efforts needed to prepare studies and present proposals to SHPDA to justify expenses. There have been no thanks for all the efforts done to eliminate patient discomfort from pneumoencephalograms and risk of arteriograms in addition to the reduction in cost by eliminating expensive hospitalizations for these procedures.

Now, C.T. scans are being done for the lumbar spine and will reduce the number of myelograms necessary. Cost-saving chymopapain injection of the lumbar disc has been developed and patient's benefits will occur. Again, no appreciation or thanks from society will be anticipated but just the clamor about the high cost of medical care. This situation does not exist only in neurosurgery and efforts and success in open heart surgery and in other specialties could equally be mentioned.

Three attorneys recently convicted of tax evasion in the mid-1970's had incomes about equal to that of the average physician income in 1981. There was no public clamor about their incomes and, of course, it would not surprise you that their penalties were no worse than that given a physician for Medicaid fraud several years ago for a far lesser sum.

You are presently living in a society constantly trying to regulate and control health care. Good health is a right and not a privilege of responsible citizens. Society wants to control the amount of expensive equipment that is needed for modern medical care and will govern the accessibility of such. Your utilization of expensive equipment and technology will be monitored with risk of being criticized for overuse and law suits for under utilization and negligence so-called. You have been blamed for the high cost of hospital care since you admit patients and order the various tests.

This comes at a time when we have made great efforts to reduce the number of hospitalizations. These concerns are presently brought to your attention since there are serious concerns about the effect society will have on the practice of medicine. There is a fear that the brightest students will not want to go into medicine in the future when it is realized that other professions have become more rewarding with far less effort.

Families and students who can generate the income necessary to become a physician will realize that such income can be invested elsewhere for a less stressful and more satisfying lifestyle. Despite these depressing situations and sad state of affairs, there is still a shining light. Any individual willing to sacrifice income to become a doctor, who is not afraid to face and work with society, can consider others more than self, is willing to sacrifice until middle age for this privilege, and knows that his usefulness may last only 20 to 30 years, has got to be dedicated to his profession. These are the individuals we need.

Many doctors may feel very comfortable and secure at the present time but the following thought should concern you: what kind of doctor will be around to take care of you in years to come? Hopefully, it will never be said that our brightest students are too smart to go into medicine.

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# Tubal Ligation and Mini-laparotomy in an Outpatient Setting

Frank R. Hurlbutt, M.D., and John Spangler, M.D., Honolulu

• *The Center for Disease Control reported that some 2,000,000 women aged 15 to 44 underwent tubal ligation in U.S. hospitals between 1976 and 1978.<sup>1</sup> This represented slightly more than 1% of all women of childbearing age in the United States. During that period, hospital stay decreased in length because fewer patients who had laparoscopy remained overnight in the hospital, as they chose freestanding day-surgery facilities. More recent figures from the Association for Voluntary Sterilization estimate 486,000 tubal ligations in hospitals and clinics in 1979, and 576,000 in 1980. Time of post-operative stay in surgical facilities has further decreased with the advent of mini-laparotomy under local anesthesia.*

By the use of special instruments to elevate the uterus out of the pelvic cavity toward the abdominal wall, and other instruments which assist in visualizing the adnexae, female sterilization may be carried out through a very small transverse suprapubic incision, or mini-laparotomy. This procedure, done under local anesthesia, allows the practitioner with some surgical experience to carry out sterilization using relatively simple instruments. Carefully performed, the risk of visceral injury is less than that associated with laparoscopy. Particularly in lean, cooperative, and otherwise carefully screened patients, mini-laparotomy may be carried out under local anesthesia alone, or with adjunctive intravenous sedation if needed. As it allays anxiety, nitrous oxide is quite effective in eliminating the need for intravenous medication. We find it advantageous to inject Marcaine 0.25% with adrenalin into the skin and subcutaneous tissues down to the fascia in the incisional area prior to our scrub. This allows the anesthetic more time to become effective before the initial incision, thus eliminating approximately 5 minutes' operating time.

## Procedure

The vagina and abdomen are prepped with Betadine in the usual manner. Paracervical block is accomplished with 3-5cc of Nesacaine 1% in each uterosacral area (4 and 8 o'clock). The anterior cervix is grasped with a tenaculum and the uterus sounded. The cervix is dilated sufficiently to allow passage of the Hulka intrauterine clamp. With this in place, the uterus may be elevated toward the anterior abdominal wall. A urinary catheter is

placed to ensure an empty bladder. The abdomen is then draped and an incision made through the skin, fascia, and peritoneum, adding local anesthesia as needed for complete patient comfort. Rotation of the uterus with the Hulka clamp delivers first one and then the other fallopian tube into the incisional area where partial salpingectomy is accomplished by the Pomeroy method. An additional 1-3cc of Marcaine with Adrenalin is necessary for both the peritoneum and areas of tube where ligation will be made. Excised tubal loops are saved for pathological identification. The peritoneum is then closed with a running 00 vicryl suture; fascia reapproximated with 0 vicryl; Scarpa's fascia closed when necessary with interrupted or running 0000 vicryl and the skin edges closed with a subcuticular 0000 vicryl suture. Three steristrips are placed vertically over the incision and a dry gauze pad applied.

During the procedure, nitrous oxide or intravenous analgesia may be given intravenously for patient comfort. ECG monitoring is carried out on all patients during the operation and full anesthesia is available in case of emergency. Our surgical capacity is such that complete laparotomy may be undertaken at the time of operation, should this become necessary.

## Fewer Complications

Mini-laparotomy under local anesthesia on carefully screened and motivated patients is subject to fewer complications than in-hospital procedures under general anesthesia. However, complications may arise.

Bowel injury is usually not a problem because of direct visibility of the pelvic structures. However, due to the smallness of the incision, bleeding may occur following unplanned traction on the mesosalpinx. This happened in one of our patients who suddenly coughed just after a Babcock clamp had been placed on the left tube approximately 1 1/4" from the uterine cornu. The rectus muscle contracted, causing the clamp to pull away from the uterus before it could be released. Bleeding was immediately obvious from a 3/4" rent in the mesosalpinx. This was repaired with a running suture and the ligation was completed without further difficulty.

Failure to achieve permanent sterilization is an obvious problem and may be due to occlusion of the wrong structure, method failure, or the coexistence of an

early intrauterine pregnancy at the time of the procedure. Method failures may be secondary to subsequent fistula formation due, occasionally, to the development of endometriosis<sup>2</sup> at the sterilization site. Failure may be seen as late as 3 years postoperatively.

## Post-TL Syndrome

Recent investigation by Hargrove and Abraham<sup>3</sup> describes a post-tubal ligation syndrome, including dysfunctional uterine bleeding, dysmenorrhea, dyspareunia, and pelvic pain. Possible cause may be due to torsion or impaired blood supply to the ovary and altered innervation to the tube and ovary because of damage to the utero-ovarian artery, a branch of the uterine. Donnez et al. in Belgium<sup>4</sup> found that tubal ligation patients had a lower serum progesterone level measured by radioimmunoassay, resulting in a deficiency in luteal function. Progesterone levels were equal to or less than 10 mg/ml in many cases of tubal ligation, and these were lower in women whose tubes were obstructed by ligation or fulguration than those where sterilization was accomplished by the clip method. In our few cases, we have encountered none of the above potential complications; however, they will be followed closely with these in mind.

## Method

At Hawaii Planned Parenthood, potential candidates for tubal ligation under local anesthesia were carefully screened for any mental or physical contraindications to the procedure. A total of 4 or 5 visits are required. The first two were for the purpose of counseling, physical evaluation, laboratory work-up, and the signing of a consent form. The third visit was on the day of surgery when the consent form was reviewed by patient and staff prior to surgery. The fourth was 5 to 7 days post-operatively and a final visit 4 to 6 weeks after surgery.

## Results

The average age of our patients was 32 years, the oldest being 43 and the youngest, 20, including 14 married, 6 single, one divorced, and one separated. Of the married women, 3 were nulliparous and the others had between 1 and 3 children. Of the single women, 5 were nulliparous and one had 4 abortions. General health was good in all cases, and none had previous



abdominal surgery. Pelvic examination revealed all uteri to be anterior, mobile, and within normal limits of size. One patient who was unmarried and with a history of 4 abortions also had been treated for gonorrhea while wearing an IUD. Previously unsuspected salpingitis was found at the time of surgery in a patient who had used both a Dalkon Shield and Cu7 IUD in the recent past.

Pre-medication was Valium 5mg in all cases, administered 1 hour before surgery. Anesthesia involved in all cases was a combination of local (Nesacaine 1% and Marcaine 0.25% with adrenalin), nitrous oxide and Sublimaze. All patients received local anesthesia, 9 needing no further anesthetic, 9 receiving nitrous oxide and 4, Sublimaze.

Two patients developed post-operative hematomas above the fascia, one drain-

ing spontaneously in 10 days and the other was evacuated by I & D on the 10th post-operative day. Otherwise there were no known complications. Operating time averaged 32 minutes, the longest being 55 minutes and the shortest 18 minutes. Time of anesthesia averaged 58 minutes, the longest being 75 minutes and the shortest 35 minutes. Recovery room time averaged 2 hours 5 minutes, the longest being 3 hours 20 minutes and the shortest 1 hour.

The pathologist reported tubal lumina identified in all cases on both sides except in one case where only the muscularis was seen on the right side. However, it was felt by the operating surgeon that the right tube had been ligated satisfactorily. Post-operative courses were completely uneventful in all cases except in those mentioned above.

Because of the relative ease of tubal ligation through a mini-laparotomy under local anesthesia in an outpatient setting and the short time spent post-operatively in the facility, this particular procedure seems to have many advantages over more conventional methods of sterilization.

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*How blessed are we for being rabies-free!*

# Cost Effectiveness of Hawaii's Anti-Rabies Quarantine Program

David M. Sasaki, D.V.M., and John M. Gooch, D.V.M., M.P.H., Honolulu\*

Since 1912, the State of Hawaii has maintained a mandatory 120-day quarantine on all incoming dogs and cats to prevent the introduction of rabies into the state.<sup>1</sup> The only current exceptions are dogs and cats flown directly from England, Australia, New Zealand, and Guam, countries the state acknowledges to be rabies-free by virtue of similar quarantine regulations. The most recent World Health Organization Expert Committee on Rabies (1973) recommends that "countries free of rabies should prohibit the importation of dogs and cats or subject them to a prolonged period of quarantine, preferably four months or more, at the port of entry or at an approved quarantine kennel. If the quarantine period is only four months, leashing of dogs and surveillance for an additional two months are recommended. The use of an inactivated vaccine soon after entry in quarantine is also recommended for dogs and cats."<sup>2</sup>

In spite of this consensus of worldwide scientific opinion including local physicians,<sup>3</sup> and a rabies scare experienced by Hawaii residents in 1967,<sup>4</sup> bills are periodically presented to the state legislature to reduce the period of quarantine. In this study, the authors present a summary of

an economic cost analysis of our present 120-day quarantine program and compare it with anticipated costs of (1) a detailed proposal to institute a 30-day quarantine period, and (2) the expected annual cost of attempting to control a hypothetical rabies outbreak on the Island of Oahu.

#### Methods

Comparing operating costs from the state's current rabies prevention program with expected costs for a proposed change to a 30-day quarantine period<sup>5</sup> and a scenario for a hypothetical rabies outbreak on Oahu, using data from the 1967 rabies scare, the following parameters were used in the projections. Fiscal year 1981-82 union wage agreements were used in calculating expected government labor costs.

A. *120-Day Quarantine:* Data were used from the Animal Quarantine Station for the fiscal year 1981-82. Included were the number of dogs and cats entering quarantine during the year, receipts paid by the owners of imported animals, and the deficit incurred by the quarantine station during the year. In addition to the above expenditures, estimates were added for ongoing minimal surveillance and public health educational programs.

B. *30-Day Quarantine:* A detailed proposal for a 30-day animal quarantine has been recommended in the past.<sup>5</sup> In this

proposal, pre-entry and on-entry vaccinations would be required for all incoming carnivores. Serum neutralizing (SN) antibody tests for rabies antibody and release of all animals with "protective" SN titers after 30 days would be compulsory. Animals not demonstrating protective titers and non-compliance cases would be quarantined for up to 120 days. All resident-owned carnivorous pets (200,000 estimated in the state) would be required to receive regular vaccinations against rabies. Confinement and observation of biting animals for 10 days upon the recommendation of the attendant physician in bite cases would be required. In addition to those groups funding the current quarantine program, all pet-owning residents would incur significant expenses. Cost are those that would have been charged in 1982.

C. *Hypothetical Rabies Outbreak:* The basis for presenting this hypothetical scenario assumes maintenance of the present quarantine program with the same number of animals handled in, and the accompanying costs for, the fiscal year 1981-82. Expected costs for surveillance would increase due to increased laboratory testing for rabies. Bite follow-up costs would remain the same as for the 30-day proposal. Costs to the owners of imported animals would remain the same as for the present quarantine program.

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\*State of Hawaii Department of Health, Communicable Disease Division, Epidemiology Branch



Costs to owners of resident pets would be expected to be the same as the cost under the 30-day proposal (required anti-rabies vaccinations).

Following such an outbreak, two new expenses would be required. Pre-exposure rabies prophylaxis, consisting of 3 doses of human diploid cell vaccine,<sup>6</sup> would be recommended for the estimated 500 people in high-risk occupations. An estimated 100 individuals per year would require post-exposure prophylaxis, utilizing one dose of human rabies immune globulin and 5 doses of human diploid cell vaccine.<sup>6</sup>

A detailed description of the methods employed in deriving costs for each group incurring expenses, and expanded tables detailing cost breakdowns for each scenario, are available upon request.

total cost. The state legislature has mandated that owners of imported animals assume financial responsibility for the operating costs of the quarantine station. The 1981-82 deficit was compensated for by a 30% increase in fees, effective May 29, 1982. Current fees are \$466 per dog and \$412 per cat. The total estimated cost of the program includes minimal surveillance and public educational activities, costs of which are borne by the state.

**B. Proposed 30-Day Quarantine Program:** Under this proposal,<sup>5</sup> expected expenditures would be 4 times the cost of the present quarantine program. The \$3,400,000 for vaccination of all resident-owned pets accounts for 74.8% of the cost. This shifts the major financial responsibility for rabies prevention to pet-owning residents who obtain their animals locally. Concurrently, the estimated cost to the state would increase by almost 5 times as a result of expected decreased confidence in

while incubating rabies is the most likely source of an outbreak on Oahu. Such an animal would subsequently develop the clinical disease and possibly transmit it to other animals and to people. The anticipated annual expenditure to control such an outbreak on Oahu under the present system would result in total costs nearly 5 times that of the present 120-day quarantine. The State of Hawaii's expected expense would increase by 570% over the expenditures for fiscal year 1981-82, due to increases in laboratory and field surveillance, animal bite follow-up and public education. Owners of resident pets would assume 63.6% of the total cost as a result of required pet vaccinations to limit the spread of the outbreak. An added expense of \$159,000 is expected for treatment of people with possible exposure to rabies and people in high-risk occupations (e.g., Animal Quarantine Station, Humane Society and veterinary hospital personnel).

## Discussion

**A. Scientific Rationale for the Current 120-Day Quarantine:** Rabies occurs worldwide except in Japan, the Republic of China (Taiwan), Finland, Iceland, Sweden, the United Kingdom, Australia, New Zealand, some of the Caribbean Islands, and most of Pacific Oceania. The disease in humans is very rare in endemic areas with adequate control programs, such as the U.S. Mainland with 18 cases in the 1971-80 period.<sup>8</sup> However, the incidence of animal rabies in the United States in both wildlife and domestic animals has increased by 270% since 1975, from 2,675 cases in 1975,<sup>9</sup> to 7,211 cases in 1981.<sup>10</sup> Hawaii's 120-day quarantine has been maintained because of the expectation that the virus, if introduced, might become established in resident wildlife in the state. Should that occur, it is extremely unlikely that the disease would ever be eradicated. Complex factors to be considered when evaluating rabies prevention in the state include:

1. The disease is almost invariably fatal in humans.
2. The incubation period is highly variable, ranging from 2 weeks to more than 8 months in naturally-infected dogs,<sup>11</sup> and from 2 weeks to 23 months in well-documented human cases in the U.S.<sup>12</sup>
3. There is frequent entry of pets into Hawaii from foreign countries (8.8% in 1974).<sup>13</sup>
4. Two known potential wildlife vectors—the small Indian mongoose (*Herpestes auropunctatus auropunctatus*) and the insectivorous hoary bat (*Lasiurus cinereus semotus*)—are established in the state.
5. The estimated probability of a 120-day quarantine's detecting a case of rabies in animals is 0.78.<sup>7</sup>
6. There are no known available tests

Continued on page 160

DISTRIBUTION OF ESTIMATED ANNUAL COSTS OF 120-DAY  
AND 30-DAY QUARANTINE PERIODS  
AND FOR A RABIES OUTBREAK, 1981-1982  
(In U.S. Dollars)

COST BY GROUP INCURRING EXPENSE	LENGTH OF QUARANTINE		
	120 DAYS	30 DAYS	RABIES OUTBREAK
STATE			
Quarantine Station	\$ 143,336	\$ 39,417	\$ 143,336
Surveillance:			
Lab and Field	1,091	332,930	376,586
Surveillance:			
Biting Animals	30	268,892	268,892
Public Education	2,000	50,000	50,000
STATE TOTAL	146,457 ( 13.3%)	691,239 ( 15.2%)	838,814 ( 15.7%)
OWNERS OF IMPORTED ANIMALS	951,416 ( 86.7%)	452,883 ( 10.0%)	951,416 ( 17.8%)
OWNERS OF RESIDENT ANIMALS	-0-	3,400,000 ( 74.8%)	3,400,000 ( 63.6%)
BITE VICTIMS AND HIGH-RISK INDIVIDUALS	-0-	-0-	159,000 ( 2.9%)
GRAND TOTAL	\$1,097,873 (100.0%)	\$4,544,122 (100.0%)	\$5,349,230 (100.0%)

## Results

**Cost Comparisons:** Comparisons by groups paying for the 120-day quarantine and the scenarios for a 30-day quarantine and a rabies outbreak, are illustrated in the accompanying table. A reduction in the quarantine to 30 days would increase anticipated costs for rabies prevention. The only population group with reduced liability in the 30-day proposal would be the owners of imported animals. The state's subsidy and costs to owners of resident animals would increase dramatically. The highest cost would involve attempting to contain a rabies outbreak and would markedly increase expenditures for the state and owners of resident animals, while remaining the same for owners of imported animals.

**A. The Present 120-Day Quarantine Program:** In the fiscal year 1981-82, the Animal Quarantine Station incurred an operating deficit of \$143,336. Owners of imported animals assumed 86.7% of the

the effectiveness of quarantine by physicians, veterinarians, and residents. This is expected to result in dramatically increased demands for surveillance, public education, and the follow-up of biting animals.

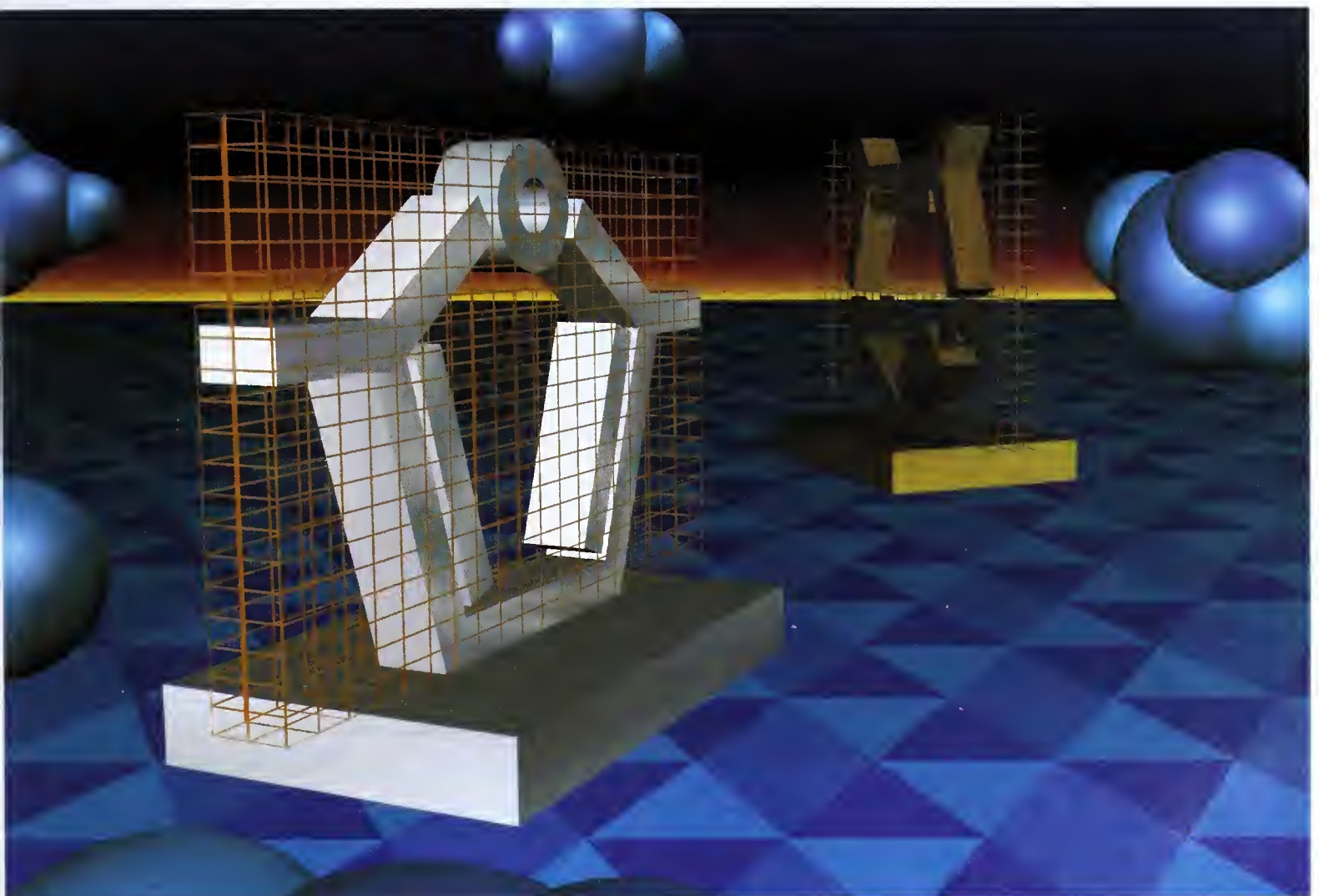
A dilemma would be presented to physicians as to whether or not to administer serum and vaccine to bite victims when the animal cannot be located for observation. With a probability of only 0.44<sup>7</sup> that a case of incubating rabies would be detected during a 30-day quarantine, there could be little public or professional confidence in its effectiveness. This could lead to additional estimated costs of \$530 per bite victim (not included in overall estimated costs) should physicians decide to administer prophylactic rabies vaccines to bite victims. High-risk groups include children, deliverymen, and political candidates during election years.

**C. Hypothetical Rabies Outbreak:** A dog or cat smuggled from the U.S. Mainland

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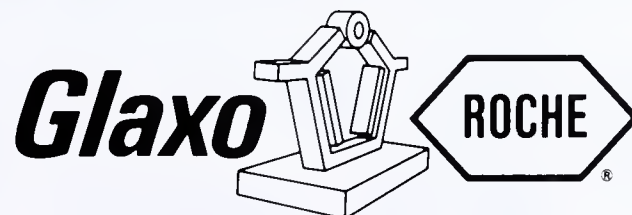
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to detect incubating rabies in animals prior to a few days before onset of the clinical disease.

7. Animal vaccines have periodically failed<sup>14, 15</sup> and indeed have periodically been responsible for producing the disease.<sup>16, 17</sup>

8. Current veterinary vaccines do not consistently abort incubating infections in animals.<sup>14</sup>

**B. The Probability of Detecting Incubating Rabies in Quarantined Dogs:** In 1971, Gooch, et al.,<sup>7</sup> used observed values to develop a theoretical curve estimating the probability of detecting incubating rabies in dogs quarantined for different periods. This was based on 17 dogs that developed rabies in England<sup>18</sup> during or after six months in quarantine. It was estimated that the probability of detecting incubating rabies during a 30-day quarantine was 0.44, and the probability of detecting incubating rabies during a 120-day quarantine was 0.78. The confidence limits for the theoretical curve indicate that a quarantine period of 9½ months would detect all cases of incubating rabies, with a 95% degree of confidence.

### Conclusion

**A. The Future of Quarantine?:** Can we ever confidently anticipate a reduction or elimination of quarantine? An affirmative scientific answer to this often-asked question appears to depend upon (1) the reliable detection of incubating rabies in animals prior to the onset of clinical disease; or (2) the establishment of

known levels of biologically protective antibodies against clinical rabies in animals. To date, neither a method for establishing early diagnosis nor for measuring the level of protective antibody levels is known. Until such time as diagnostic methods or determinations of immunological protection in vaccinates is known with confidence, our 120-day quarantine program is considered to offer the state the greatest protection against entry of this dread disease into Hawaii.

**B. Proposal:** The only opponents to the present quarantine program appear to be a few of those who import animals into the state from endemic areas. They bear the financial burden and inconvenience that the system necessitates. The entire population of the state benefits from our rabies-free status, not only in keeping the disease with its psychosocial and economic costs out of the state, but also in preventing other zoonoses and vectors carried by dogs and cats from gaining entrance. Increased quarantine costs to owners of imported animals probably increases the temptation to avoid quarantine by smuggling pets into the state. The authors suggest that the state government absorb a larger portion of the costs of quarantine, in recognition of the benefits of the quarantine program to all residents of the state. This would acknowledge the inconvenience and financial burden borne by owners of imported animals. This action would also decrease the likelihood of smuggling animals into the state. At the same time, it would not alter the present quarantine program, still thought necessary by medical and veterinary experts.<sup>2</sup>

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*Oxygen toxicity still a problem . . .*

## Vitamin E and Oxygen Toxicity in Adult Rats

John K. Timtim and J. Judson McNamara, M.D., Honolulu\*

Oxygen at high partial pressures is toxic to the lung. Several theories have been advanced about the possible mechanisms of O<sub>2</sub> toxicity. At the molecular level the current concept of tissue injury from free radical production appears the most likely explanation.<sup>1</sup> This theory

maintains that various highly reactive and potentially cytotoxic-free radical products of oxygen are generated metabolically in the cell. Surfactant is known to be destroyed by several hours of exposure to a high oxygen environment. At the molecular level, highly reactive, potentially cytotoxic-free radicals of oxygen are generated intracellularly in a high oxygen environment and are proposed as the underlying cause of the surfactant destruction and pulmonary damage seen with oxygen toxicity.

Based on these theoretical considerations, a variety of chemical antioxidants have been examined as possible protec-

tion against the adverse effects of a high oxygen environment. Vitamin E, a natural antioxidant, has been shown to provide potential protection against oxygen toxicity in preliminary studies in neonates<sup>2</sup> and in vitamin E-deficient mice.<sup>3</sup> The purpose of this study was to examine the usefulness of vitamin E in treating O<sub>2</sub> toxicity in normal adult rats.

### Materials and Methods

Thirty Sprague Dawley rats ranging in weight from 304 to 910 g were fed rat chow (Ralston Purina Lab Chow) and

*Continued on page 162*

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Six rats at a time were weighed, then put into a plexiglass chamber 51.3 x 46.2 x 19.2 cm in size. The chamber was divided into six equal sized sections by wire mesh allowing free flow of gas. Humidified oxygen was supplied at a flow rate of 5 to 10 liters/minute. Calcium oxide was used to absorb CO<sub>2</sub> from the chamber.

The oxygen saturation in the chamber reached 90% or greater within 1 hour after putting the rats into the chamber and this was considered the starting point of the experiment. Chamber temperature and O<sub>2</sub> saturation were monitored hourly (Instrumentation Laboratory pH/Gas Analyzer Model 113). Throughout the experiment the O<sub>2</sub> saturation percentage was 90% or greater except for brief periods when the chamber was opened for removal of dead animals. Temperature ranged from 26 to 29°C.

Death was determined by observation of cessation of respiration and was verified by the absence of a detectable heartbeat. Survival time was rounded off to the nearest half hour. All animals died. The thoracic cavity of the dead animal was opened and the lungs were removed. The lungs were placed into a 10% formalin solution for several days, then embedded, sectioned, and stained with hematoxylin and eosin.

At least 2 ml of blood was obtained post mortem either from direct cardiac puncture or by aspiration from the thoracic cavity of pooled blood after removal of the heart and lungs. The blood was placed in a glass tube, and serum vitamin E levels were determined by the fluorometric method described by Hansen, et al.<sup>4</sup>

The experiment consisted of five different exposure periods with differing doses of vitamin E given to test animals in each exposure period. Two or three control animals were included with each exposure period.

**Exposure 1.** Immediately prior to exposure, three rats were injected intramuscularly with 100 mg of vitamin E (Hoffman-La Roche, Nutley, New Jersey). Three rats were used as control animals and were exposed without prior injection.

**Exposure 2.** Twenty-four hours prior to exposure, four rats were given 50 mg of vitamin E intramuscularly, and two rats were injected with an alcohol-saline placebo that consisted of the same reagents as the solution holding the vitamin E. The rats were given a second injection of the same doses after 24 hours of exposure.

**Exposure 3.** The same procedure that was used in Exposure 2 was used here and in the following exposure. Four rats were injected with 20 mg vitamin E/kg body weight and the remaining two were injected with placebo.

**Exposure 4.** Four of the rats were injected with 400 mg/kg of vitamin E for each injection and the remaining two were injected with placebo.

**Exposure 5.** Three rats were injected with 10 mg/kg vitamin E for each injection and the remaining three were given placebo.

## Results

The results of each experiment appear in Table 1. None of the small subgroups

post-mortem blood of high dose animals were significantly higher than control levels ( $p < .05$ ) although there was no significant difference in vitamin E blood levels between low dose and high dose animals. Survival times of high dose rats were significantly less than survival times of control rats ( $p < .001$ ) and low dose rats ( $p < .01$ ). Results were analyzed using the Student's t-test.

Gross inspection showed the lungs to be purple in color and liver-like in consist-

Table 1—Survival Time and Vitamin E Level

Animal Identification	Weight g.	Vitamin E Dose mg/kg	Survival Time h.	Post-mortem Vit. E. Level mcg/ml
<b>Exposure 1</b>				
Rat A	320	312.5	45.0	16.0
B	410	244.0	44.5	14.0
C	345		44.5	QNS
D	322	310.6	44.0	7.0
E	328		57.8	4.0
F	382		53.8	QNS
<b>Exposure 2</b>				
Al	910	Placebo	52.5	10.0
Bob	700	71.4	50.5	0.0
Chuck	316	Placebo	62.0	0.0
Dan	386	129.7	47.0	0.0
Ethan	324	154.3	48.5	0.0
Frank	366	136.6	46.0	0.0
<b>Exposure 3</b>				
Ann	391	20.0	48.5	12.0
Betty	341	Placebo	50.5	5.5
Carol	800	20.0	48.0	15.0
Donna	376	29.0	57.0	17.0
Erin	307	20.0	48.3	9.1
Francis	700	Placebo	60.0	13.0
<b>Exposure 4</b>				
Umit	599	Placebo	58.5	18.0
Verneda	317	400.0	38.5	38.0
Wanda	364	400.0	32.0	86.0
Xerox	354	400.0	37.0	89.0
Yolanda	359	400.0	39.0	40.0
Zeus	670	Placebo	58.5	10.0
<b>Exposure 5</b>				
Grayson	425	10.0	60.5	4.3
Hal	500	Placebo	56.5	4.3
Igor	326	10.0	59.5	7.1
John	335	Placebo	68.0	2.9
Kendrick	324	Placebo	58.5	2.1
Lea Anne	675	10.0	53.5	11.0

of vitamin E-treated animals, varying either dosage or dose regimen, showed significant difference in mortality from placebo controls. Data was analyzed with respect to total amount of vitamin E received regardless of the method of administration. Rats receiving >20 mg/kg of vitamin E were considered high dose (11 animals) and 20 mg/kg or less, low dose (7 animals). There were 12 controls.

The results are summarized in Table 2. No significant difference was noted in mean survival time for control animals and animals receiving a low dose. As might be anticipated, vitamin E levels in

tency. There was considerable pulmonary edema and congestion with some intra-alveolar hemorrhage but no hyaline membrane. The histological appearance was essentially the same in control and vitamin E-treated animals.

## Discussion

The present study shows that vitamin E offered no protection against oxygen toxicity in normal adult rats exposed to a high oxygen environment. Previous studies demonstrating a protective effect of

Continued on page 164

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vitamin E against O<sub>2</sub> toxicity have been done on vitamin E-deficient animals. Poland et al. exposed two groups of adult white mice to oxygen concentrations of 65% to 100%. One group was fed a vitamin E-deficient diet and the other group was fed a vitamin E-supplemented diet. Poland found that vitamin E deficiency enhances the toxic effects of oxygen in mice.<sup>3</sup> In a preliminary report, Ehrenkranz et al. studied neonates with respiratory distress syndrome who required an inspiratory O<sub>2</sub> concentration of more than 40%.<sup>2</sup> The neonates were considered to be vitamin E-deficient. Ehrenkranz in-

jected 20 mg/kg of vitamin E intramuscularly into some of the neonates. Controls did not receive a placebo. All subjects were treated with supplemental, positive and expiration pressure, ventilation or continuous positive airway pressure. Administration of vitamin E during the acute phase of respiratory distress appeared to decrease the incidence of bronchopulmonary dysplasia believed to result from O<sub>2</sub> toxicity and resuscitative measures.

The majority of human patients in a clinical setting are not vitamin E-deficient. We chose to conduct our studies on normal animals in hopes of obtaining results applicable to the usual patient popu-

tained. In Ehrenkranz's study, serum vitamin E levels remained elevated 24 hours or more after each injection. Newmark et al. found that intramuscular injection of vitamin E in dogs produced a rapid and substantial rise in blood-vitamin E concentrations.<sup>8</sup>

The available information on possible toxic effects of vitamin E is contradictory. Hypervitaminosis E in rats has been associated with inhibition of wound healing<sup>9</sup> and prolongation of blood clotting time.<sup>10, 11</sup> In contrast, Dymsha and Park<sup>12</sup> reported adverse effects in rats fed 50 times the normal allowance of vitamin E, and Farrel et al. concluded that megavitamin E supplements in man produced no apparent toxic effects in several tests including coagulation.<sup>13</sup> Most studies done on vitamin E intoxication have involved oral doses. However, ingestion or intramuscular injection of large doses of vitamin E may not be associated with corresponding high tissue concentrations because absorption may become less efficient with high doses.<sup>14</sup> Our findings indicate that intramuscular vitamin E injection of normal adult rats exposed to hyperoxia has no beneficial effect in reducing oxygen toxicity. In addition, the significant decrease in survival time of the rats given high doses of vitamin E suggests a previously unknown toxic effect and is worthy of further investigation.

Table 2—Comparison of Survival Time and Post-mortem Vitamin E Levels

	Control	Low Dose (<20 mg/kg)	High Dose (>20 mg/kg)
• No. of rats	12	7	11
• Post-mortem Vitamin E Level (mcg/ml)			
Range	2.1-18.0	4.3-17.0	7.0-89.0
Mean	7.5	10.8	41.4
S.D.	5.7	4.4	33.8
• Survival Time (Hours)			
Range	45.5-68.0	48.0-60.5	32.0-52.5
Mean	56.8	53.6	42.9
S.D.	5.8	5.5	5.6

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lation exposed to hyperoxia.

Like Ehrenkranz and his co-workers,<sup>2</sup> we administered vitamin E by injection, allowing greater control over the duration of administration than could be obtained by feeding the animals vitamin E as was done by Poland et al.<sup>3</sup> The vitamin E was administered over a wide range of doses, from 10 mg/kg to 400 mg/kg. High doses of vitamin E resulted in significant decrease in survival time relative to control animals and animals receiving lower doses. These higher doses were considerably greater than the 20 mg/kg used in neonates. Survival times of the control rats were in agreement with the findings of several researchers in studies of rats exposed to 95+% O<sub>2</sub>.<sup>5-7</sup>

The lung histology revealed changes characteristic of the acute phase of O<sub>2</sub> toxicity as described by Frank et al.<sup>1</sup> However, there was no evidence of fibrin deposits or hyaline membrane formation. This was attributed to the relatively short survival time of 2-3 days.

The differences between post-mortem vitamin E levels in high dose and control animals was statistically significant (p<.05). Monitoring of vitamin E levels throughout the experiment, as was done in the Ehrenkranz study, would have been informative. However, multiple blood sampling of the rats may have resulted in excessive trauma to the already compromised animal therefore, only the post-mortem vitamin E level was ob-

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# Post-traumatic Stress Disorder

George Bussey, M.D., Honolulu\*

The role of stress in psychiatric disorders has long been recognized, although in any particular disorder its importance has varied. As our knowledge of stress and its effects on the physiologic and psychologic functioning of individuals has increased, psychiatry has been able to identify a specific disorder that is caused by excess stress, and to identify the criteria that define that disorder. This disorder is now referred to in the Diagnostic and Statistical Manual of Psychiatric Disorders, Third Edition, as "post-traumatic stress disorder."<sup>1</sup> In the past this particular disorder was referred to as "war neurosis" or "traumatic neurosis," probably because it was most commonly identified in soldiers who had faced combat.

Recently, much of the literature on post-traumatic stress disorder has been focused on Vietnam veterans. It is important to remember, though, that any overwhelming stress experienced by an individual can provoke the disorder. In the first major study of a civilian catastrophe, Alexandra Adler studied the survivors of the Coconut Grove fire.<sup>2</sup> Among other findings, she demonstrated that the symptoms of depression and anxiety can persist for at least a year after the catastrophe. More recent research has included burn victims, auto accident victims, and victims of industrial accidents.

There is a relative paucity of research on the disorder in law enforcement and correctional officers, despite such highly publicized events as the Attica and New Mexico prison riots.

This paper will present a case of post-traumatic stress disorder in non-military setting, and discuss the presentation and treatment of the disorder. This disorder should be of interest to non-psychiatrists as well as psychiatrists, because of the physiologic presentation of many of the symptoms that make up the disorder.

## Case Presentation

A 39-year-old man, calling to make his first contact with a psychiatrist, stated he didn't want to admit that he couldn't handle what was happening to him but he "had to get help" with what was bothering him. He had been working at a state prison for the past 11 months, but had been unable to get himself to go to work for the past 3 weeks. He related that his inability to return to work began after spending 96 hours straight in the prison during a "shakedown." When he walked out of the prison at that point, he was unable to consider going back. He described

frightening dreams about the prison, an inability to stop thinking about the prison while awake, decreased interest in other activities (including a decreased sexual drive), and a decreased tolerance for sudden sounds (startle response). He also reported easy irritability and fighting with his family. In addition, he also reported stomach cramps, headaches, dry mouth, and weight loss of 10 pounds.

Further questioning revealed that during the shakedown he had observed physical force being used in the searching of inmates. During the search of the prison, the patient reported that he had seen numerous "shanks" and other deadly homemade weapons, as well as weapons that had been brought in from outside of the prison. In addition, he reported that he had been involved in a minor riot about 6 months prior to the shakedown, at which time he was assaulted by inmates and feared for his life. Subsequent to that, he had had 2 episodes where he had to take off from work with non-specific physical complaints.

Past history revealed no psychiatric symptoms prior to his job at the prison. His family background was that of a respected family in his ethnic community, and he had been involved in numerous civic activities within this community and was used to being respected and trusted. Previous work included working as a minister's assistant and an interpreter for the court.

A diagnosis of post-traumatic stress disorder was made and the patient was treated with weekly psychotherapy, focusing on ventilation of feelings and memories surrounding the experiences at work. When he attempted to return to work, there was an exacerbation of symptoms, associated with physical proximity to the prison, as well as continued threats by inmates. Therefore, the decision was made to transfer him out of this work.

Psychotherapy at that point focused on his feelings of "failure" at not being able to stand up to the pressures of prison work, and the rebuilding of self esteem as he successfully worked in positions and was interviewed for permanent jobs. Because of the severity of the depressive symptoms (anhedonia, insomnia, weight loss, decreased libido), the patient was started on antidepressants with good response. He was also started on anxiolytic medication, also with good response, although it was ineffective when the patient was trying to return to the prison. After the decision was made to seek different employment, the anxiolytics were successfully discontinued. Shortly thereafter, the antidepressants were tapered and discontinued, but headaches, lethargy, sleep disturbance and an-

hedonia returned, so they were reinstituted with prompt remission of symptoms. The patient currently functions well at his new job, and by his description, seems to be his "old self" again.

## Discussion

Table 1 lists the criteria for a DSM-III diagnosis of post-traumatic stress disorder.

Table 1

- A. The occurrence of a stressor that produces significant symptoms of distress in nearly all people
- B. The re-experiencing of the traumatic event by at least one of the following:
  1. Recurrent and intrusive recollections
  2. Recurrent dreams or nightmares
  3. Suddenly feeling or acting as if the event were occurring again in response to some triggering stimulus
- C. Numbing of responsiveness to or reduced involvement with the external world, beginning some time after the trauma, as shown by at least one of the following:
  1. Markedly diminished interest in one or more significant activities
  2. Feelings of detachment or estrangement from others
  3. Constricted affect
- D. At least two of the following symptoms that were not present before the trauma:
  1. Hyperalertness or exaggerated startle response
  2. Sleep disturbance
  3. Guilt about surviving when others have not, or behavior required for survival
  4. Memory impairment or trouble concentrating
  5. Avoidance of activities that arouse recollection of the traumatic event
  6. Intensification of symptoms by exposure to events that symbolize or resemble the traumatic event

Associated features include depressive symptoms, restlessness, nervousness, tremor, explosiveness, irritability, non-violent impulsive behavior, emotional lability, autonomic lability, headache, vertigo, and alcohol and drug abuse. It should be noted that the stressor under question does not have to be of sufficient severity to cause the full post-traumatic disorder to develop in most normal people but rather it be strong enough that most people would have noticeable psychological reactions to it, such as increased anxiety, bad dreams or phobic behavior.

There has been little research on post-traumatic stress disorder in law enforcement or correctional officers. There is, however, data on another civilian voca-

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tional population under severe stress. Alfred M. Bloch published his findings of a "combat neurosis" in teachers in an inner-city school system. The description of the symptom complexes of these teachers were consistent with the diagnosis of post-traumatic stress disorder. In his study, as well as studies of military personnel, it was found that a premorbid personality with an impaired ability to deal with fear and anger, seen as passive, rigid, and moderately obsessional, and with a moralistic and punitive super-ego were most likely to succumb to the disorder.

Over 50% of the teachers referred for psychiatric evaluation had medical histories indicating in excess of 2 years of psychophysiological response to stress. While these symptoms involved almost all organ systems, over 80% of the patients with physical symptoms complained of gastrointestinal problems, ranging from ulcers to nausea and diarrhea.

The treatment of post-traumatic stress disorder involves multiple modalities. Behavioral techniques such as relaxation therapy and progressive desensitization have been used to treat circumscribed complaints such as anxiety, insomnia, and phobic symptoms. The most common medications used have been minor tranquilizers (benzodiazepines) and antidepressants. The anxiolytic should be used to treat symptoms of anxiety for

only brief periods of time, and should not be a substitute for ventilation and abreaction.

Imipramine has been singled out by some as the antidepressant of choice because of its known efficacy in both depression and phobic symptoms. If antidepressants are used, they should be given at adequate doses to obtain therapeutic results (150 mg/day of imipramine or the equivalent). The anxiolytics should be individually titrated, perhaps starting at 2-5 mg of diazepam T.I.D. or equivalent doses.

The type and amount of psychotherapy will vary with the chronicity and severity of the case. For milder cases, brief, supportive psychotherapy may suffice, while more severe or chronic cases may need more extensive, insight-oriented treatment. Dependence should not be fostered. One of the major goals should be a return to a productive role in society. This may involve a change in career (as in the case presentation), with appropriate vocational rehabilitation. At times this disorder has major effects on family or marital dynamics, and it is then appropriate to involve the spouse or children in the therapeutic process until those issues are resolved.

In addition to the above mentioned interventions, it is important to consider preventative measures for those people who work in environments where there is an expectation of severe occupational

stress. These include psychological training to prepare individuals for stressful situations, such as rehearsal and role playing. Morale enhancement via "rap groups", support of higher authority, and prompt response to stressful incidents have also been shown to be helpful. A final preventative measure might be the establishment of "crisis teams" or a "crisis plan" that would direct itself not only to defusing or controlling the crisis but would also do crisis intervention therapy with the stressed individual(s), thereby hoping to block the emergence of the full blown posttraumatic stress disorder.

#### Summary

Herein is presented a case history of post-traumatic stress disorder. The presentation of the patient, salient diagnostic signs and symptoms, and appropriate treatment interventions have been discussed. Some possible preventative measures have been suggested.

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## Editorial

### Quackery

"A certain section of medical opinion . . . has succumbed to the messianic delusion. Its spokesmen are not content to deal with the patients who come to them for advice; they conceive it to be their duty to force their advice upon everyone, including especially those who don't want it. That duty is purely imaginary. It is born of vanity, not public spirit. The impulse behind it is not altruism, but a mere yearning to run things. A physician, however learned, has no more right to intrude his advice upon persons who prefer the advice of a Christian Scientist, a chiropractor, or a pow-wow doctor than he has to intrude it upon persons who prefer the advice of some other physician.

"Here, I hope I shall not be suspected of inclining toward the Eddyan buncombe. It seems to me to be pure balderdash. I believe that the services a Christian Science practitioner offers to his customers are no more valuable than the service a footwash evangelist offers to a herd of country jakes. But the right to freedom obviously involves the right to be foolish. If what I say must be passed on for its sagacity by censors, however wise and prudent, then I have no free speech. And if what I may believe—about gallstones, the Constitution, castor oil, or God—is conditioned by law then I am not a free man.

"It is constantly argued by the proponents of legislation against quacks that it is necessary for the public safety—that if it is not upon the books, the land will be ravaged by plagues, and that the death-rate will greatly increase, to the immense damage of the nation. But in all this there are a great many more assumptions than facts, and even more false inferences than assumptions. What reason is there for believing that a high death-rate is, in itself, undesirable? To my knowledge, none whatever. The plain fact is that, if it be suitably selective, it is extremely salubrious. Suppose it could be so arranged that it ran to 100% a year among politicians, executive secretaries, drive chairmen, and the homicidally insane? What rational man would object?

"I believe that the quack healing cults set up a selection that is almost as benign and laudable. They attract, in the main, two classes: first, persons who are incurably ill, and hence beyond the reach of

scientific medicine, and second, persons of congenitally defective reasoning powers. They slaughter these unfortunates by the thousand—even more swiftly and surely than scientific medicine (say, as practiced by the average neighborhood doctor) could slaughter them. Does anyone seriously contend that this butchery is anti-social? It seems to me to be quite the reverse. The race is improved as its misfits and half-wits are knocked off. And life is thereby made safer and cheaper for the rest of us."

H.L. Mencken: *Christian Science*  
*Baltimore Evening Sun*, Feb. 28, 1927



Harry L. Arnold Jr., M.D.

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\* \* \*

*Noninvasive Medical Imaging*, a new international journal devoted to this subject, is now accepting manuscripts for publication, on the subjects of computerized tomography, ultrasound, nuclear magnetic resonance, digital radiography,

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and nuclear medicine, Larry D. Greenfield, the editor, can be reached at 10450 Wilshire Blvd., Suite 8H, Los Angeles, Calif. 90024. The first issue is to appear in January 1984.

\* \* \*

*Good news for moderate drinkers of alcohol has turned up in Houston, where G. Harley Hartung and associates have found that blood levels of high-density lipoprotein cholesterol are raised by drinking 3 cans of beer a day to a higher level than that measured after 3 weeks of abstinence.*

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\* \* \*

*Caffeine DOES enhance the analgesic effect of acetaminophen, say Eugene Laska et al. in the April 1983 issue of Clinical Pharmacology and Therapeutics.*

\* \* \*

"Use or lose it!" Sexual activity (at least 3 times per month) significantly diminishes vaginal deterioration in postmenopausal women; so say Sandra Lieblum et al. in the April 22 *JAMA*.

\* \* \*

*If you're going to go on smoking, be sure to maintain your ideal weight: lean (underweight) smokers, like fat ones, have 10 times the mortality that ideal-weight smokers have! So say Robert Garrison and colleagues in the April 22 issue of JAMA.*

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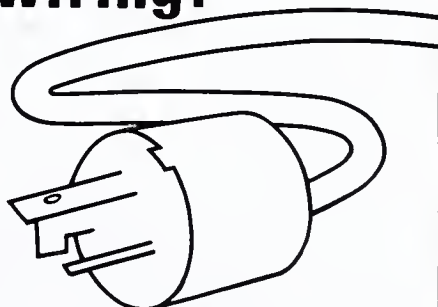
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# Pregnant Addicts and Health Care

Linda Rose, M.L.S., M.P.H., Honolulu

Drug and alcohol abuse during pregnancy is a health hazard to both the expectant mother and the unborn child. While expectant mothers threaten their own physical and mental well-being through continued drug abuse, the children of these women are often born addicted and experience withdrawal symptoms, severe illness, or early death. These children may be born physically deformed or mentally retarded as a direct result of their mothers' drug abuse.<sup>1, 2</sup> Even when women know the hazards of substance abuse during pregnancy, many continue to abuse drugs and alcohol. The aim of this study was to explore why they do so.

## Method

In-depth interviews were conducted with 12 women who had abused drugs during pregnancy. Women from 2 local drug treatment centers were selected for the study. Each woman who participated met the following criteria:

She must have been using a drug more than once a week for a period of more than 1 month.

She must have been using drugs at the time she learned she was pregnant.

She must have known that drug abuse during pregnancy was a health hazard to both herself and her unborn child.

The sample was composed of alcoholics, heroin addicts, barbiturate addicts, and abusers of over-the-counter drugs. Cultural/ethnic groups represented included Caucasian (Hawaii-born and from the Mainland), part-Hawaiian, Japanese, Korean, and American Indian. The women ranged in age from 22 to 35 years, the average age being 27. Most had graduated from high school and some had been to college.

## Results

Three major themes emerged from the interviews: spouse pressure, inadequate health care, and continued drug use after delivery.

**Spouse pressure.** Previous research has shown that female addicts do not actively practice birth control. The false notion that drug abuse protects against pregnancy is widespread among these women.<sup>3</sup> As a result, pregnancy is quite common. Among the women in this project, most had become pregnant without intent, and most of the pregnancies were unwanted by the women. Despite these circumstances, they still gave birth. Pressure from boyfriend or husband to have the child seemed to be a significant factor

in their decision. Of the 12 women interviewed, 9 reported they would have preferred an abortion or adoption but had succumbed to the pressure of the partner to have a child.

Later in pregnancy, most of these women had developed feelings of resentment towards both spouse and unborn child. This resentment was expressed through continued, and sometimes increased, drug abuse, which was sustained either late into the pregnancy or throughout it.

**Inadequate Health Care.** The interviews indicated that most of the women had received inadequate health care in regard to both drug problem and pregnancy. All but one of the women had had some contact with the medical care system, yet each had continued to use drugs while pregnant. Several of the women expressed fear of discussing their drug problems with physicians or health workers and had failed to inform them of their drug habits. Others had made their drug use known but had resisted or disregarded the medical advice offered.

The attitude and reaction of the physician or health worker may have been important, as some of these women reported that medical personnel had demonstrated a lack of knowledge or sensitivity. Misinformation from the health care provider about the dangerous effects of drug use during pregnancy may also have been a factor.

**Continued drug use after delivery.** All 12 of the women in this study continued using drugs after the birth of their babies. Although some had thought "having a baby would help straighten me out" or "help me get my life together", the birth of the child may have contributed to continued substance abuse. Typically, the women had developed fear and anxiety about the health of their unborn children, although in most cases, they did give birth to physically healthy children.

This, in turn, brought a sense of relief to them, which justified their continuing to use drugs. In the cases of children born with serious health problems directly related to the mother's use of drugs during pregnancy, these women expressed guilt, which then led to continued drug abuse. Regardless of the outcome of the pregnancy, most of the women in this study developed an overwhelming sense of inadequacy shortly after delivery. These feelings, in turn, probably contributed to their further drug abuse.

## Discussion

Implications for health planning and the delivery of health care may be in-

ferred from this study. The pregnant addict's sexual partner plays a major role in influencing her decision to carry her baby to term. In providing prenatal care to drug or alcohol addicted women, physicians may need to explore the patient's decision to give birth and to make referrals to appropriate resources in the community.

Health educators and mental health workers should emphasize assertive training, basic coping skills, and the development of self-esteem. Such training and counseling might allow pregnant addicts to exercise more control in their decision-making. Social workers need to realize the apprehensions and pressures experienced by these women and to explore with them alternatives such as adoption and temporary foster care. Since female addicts may have unwanted pregnancies, family planners must pay special attention to this when explaining and recommending birth control practices.

Women who are drug addicts need to know more about the hazards of drug use during pregnancy. They need to understand the importance of working closely with their health care providers. Although brochures and pamphlets may be useful in this regard, those available for distribution to these patients could be improved. Informative, easy-to-read literature addressing both drug and alcohol abuse during pregnancy should be developed by health educators.

Since most pregnant addicts have some contact with the medical care system, physicians and other health workers need to recognize how they can intervene in the drug habits of these women. They must be particularly alert to patients manifesting symptoms of drug addiction or alcoholism, inquiring about their use of drugs and alcohol. Many of these women are reluctant or afraid to discuss such problems; tactful inquiry, follow-up, and close supervision are mandatory in working with pregnant addicts.

Continuing education in problems of substance abuse could be most beneficial in supplying pertinent information and assisting development of greater insight and sensitivity to addictive behavior. Health professionals need up-to-date knowledge of various community resources, such as drug treatment facilities and family planning/counseling services, so that they can make referrals to these services as necessary.

Finally, it should be a major concern of health care providers to encourage a more healthful lifestyle for both mother and child after delivery. Home follow-up

*Continued on page 172*

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## **Pregnant Addicts**

*Continued from page 170*

by a public health nurse or social worker might help the female addict to deal with the feelings and worries she experiences after delivery. The health professionals should further assist the new mother in locating necessary services such as parenting classes, drug detoxification, and temporary foster care.

## **Summary**

This paper has explored substance abuse during pregnancy, with some initial findings and some suggestions for improving the health care of these women. Only through increased understanding and modifications of care will we be able to affect the serious problem of drug and alcohol abuse during pregnancy.

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**Ed: Douglas G. Massey, M.D.**

**Handbook of Poisoning** By R.H. Dreisbach, M.D. 632 pp. Illustrations. Lange, Los Altos, Calif. 94022. \$11.

This is a valuable book for house officers, physicians practicing primary care, and for those who deliver emergency care in- and outside the hospital. The coverage of material includes both poisons and hazards: agricultural poisons such as halogenated insecticides and cholinesterase inhibitor pesticides, as well as industrial hazards, including nitrogen compounds such as aniline, dimethyl glycols, hydrocarbons, corrosives, metallic poisons, cyanides, and particulate matter. Household hazards such as cosmetics and food poisonings are described succinctly. A large section covers medicinal poisons well. Animal and plant hazards are also well covered. All in all, the book is worth more than its price. It should be in every emergency room and in the hands of all who treat medical emergencies.

John H.C. Kim, M.D., FACP

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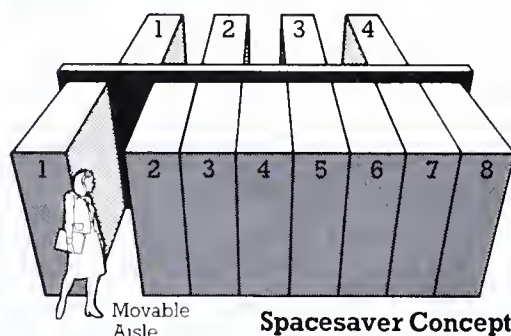


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Francis Fukunaga, M.D.

## Clinical Pathologist's Easy Chair

### Creatinine

Creatinine is produced at a relatively constant rate as a result of muscle metabolism. It is the anhydride and waste product of creatine and about 2% of the body muscle creatine is transformed every 24 hours. Serum concentration decreases with age and is slightly lower in women (about 90% of male levels but slightly higher during pregnancy). Creatinine is freely filtered by the glomeruli and is not reabsorbed, although small amounts are also secreted by the tubules. The serum concentration is a useful index of glomerular filtration because of the constant rate of production and renal clearance, and its relative independence of dietary changes, degree of hydration, and protein metabolism. However, there may be a significant increase of serum levels with increased intake of cooked meats.<sup>1</sup>

Serum creatinine determination is an important aid in monitoring patients with renal disease and after renal transplantation. Any day-to-day increase of 25% after transplantation should be considered a presumptive evidence of rejection.<sup>2,3</sup> Serum creatinine does not rise until there is considerable renal impairment, and some authors feel that creatinine clearance is a more sensitive indicator of renal disease. The day-to-day variation of serum creatinine levels in normal individuals is about 8% (95% confidence). Analytical factors represent about 80% of this total variability. The coefficient of variation for creatinine clearance is greater (12%) because it is affected by the variability of not only the serum creatinine, but also the urine creatinine, urine volume and collection interval.<sup>4</sup> Creatinine clearance is calculated (urine creatinine in mg/dl x flow rate in ml per hour divided by the serum creatinine in mg/dl). Any condition that lowers the urine creatinine flow rate without simultaneously affecting the serum creatinine will cause a low creatinine clearance. This includes "lost urine," short collections due to poor timing, or incomplete emptying of the bladder.

Twenty-four-hour urine samples minimize collection and timing errors. If the serum sample is collected after fasting and the diet includes cooked meats during the urine collection, the increased urine creatinine excretion will cause a significant over-estimation of the creatinine clearance.<sup>5</sup> Creatinine clearance values are slightly higher than inulin clearance

values, but give a fairly good estimate of glomerular function. Creatinine clearances of 60 to 80% reflect mild dysfunction, 40 to 60% moderate, and 20 to 40% indicate severe renal impairment. Creatinine clearance decreases with age (about 130 ml/minute/1.73 square meter of body surface at age 30 down to 97 ml/min/1.73 square meter at age 80 years). The decrease with age is due to decrease of muscle mass and loss of glomerular function. The decreased clearance in the elderly may mean a need to adjust antibiotic (e.g. aminoglycosides) and other medication dosages.<sup>6</sup>

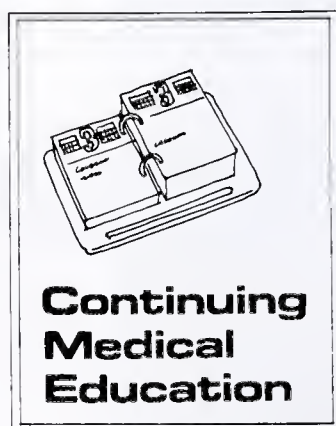
The most frequently quoted values for urinary creatinine excretion is 1 to 2 grams per 24 hours in adult males and 0.6 to 1.5 grams per 24 hours in adult females. If the patient is on a meat-free diet and his height and weight are known, the urine creatinine may serve as a very rough estimate of completeness of urine collection. The urine creatinine, however, is not an absolute index of completeness of urine collection because of its dependence upon many factors such as physical activity, muscle mass, hormonal balance, fluid and electrolyte balance, and diet. Severe exercise and high meat diets cause significant increases in creatinine excretion. Some authors feel that the daily creatinine excretion is so variable it is not a satisfactory index of completeness of timed urine collection.<sup>7</sup> The coefficient of variation of creatinine excretion in urine averages 10% but may be as high as 29%.<sup>8</sup>

There are a number of causes of interference in the laboratory measurement of creatinine. Urine must be refrigerated or a bacterial inhibitor must be added, since bacterial metabolism may convert creatine to creatinine. Most methods use the Jaffe reaction based upon the formation of a colored complex by creatinine and alkaline picrate. This reaction shows a positive error of 0.2 to 0.3 mg per dl. Centrifugal analyzers give a false positive bias. It undergoes 3 phases of color development: (1) accelerated rate when fast-

reacting pseudocreatinine substances and creatinine contribute (20 to 25 seconds); (2) short period when only creatinine contributes; and (3) slow reaction by pseudocreatinine substances. The color reaction must not be allowed to progress too long or a false increase by pseudocreatinine substances occurs.<sup>9</sup> Other non-creatinine substances that may contribute to the colored product include ketoacids such as those found in starvation and diabetes,<sup>10</sup> levodopa, methyldopa, glucose, ascorbic acid, isosorbide and cephalosporin.<sup>11</sup> Clofibrate can cause an increase due to muscle damage. Mild exercise may cause a 20% increase and severe exercise a 40% increase. Some drugs are nephrotoxic such as amphotericin B, arsenicals, aminoglycosides, colistin and cephaloridin.<sup>12</sup>

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## Continuing Medical Education

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### LOCAL ACCREDITED PROGRAMS ONGOING

For a complete list of ongoing programs, please refer to the April 1983 issue of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

### SPECIAL EVENTS

July 9-16, 1983	Cardiovascular Medicine and Surgery: At: Mauna Kea Beach Hotel. Contact: Martha Amlin, Office of Post Graduate Medical Education, Room TC 129, Stanford, Calif. 94305.
July 16-23, 1983	Gynecologic Laser Surgery: At: Hyatt Regency Maui. Symposium Medicus, 2880 Shadelands Drive, Suite 404, Walnut Creek, Calif. 94598.

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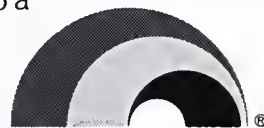
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HMA  
Council  
Meeting

### April 1, 1983 Meeting

- With prior Council approval, the method of accounting used by the HMA is being shifted to the accrual method. Expenses will be accrued currently. Income will stay on a cash basis and reconciled at year end to the accrual basis.

- An old-fashioned Hawaiian luau to be held in Waimanalo, Pa'honu, was planned for Saturday, May 14, in support of Dr. George Mills' candidacy for re-election to the AMA Board of Trustees.

- In response to a request, HMA will direct a letter to HCFA and each legislator from Hawaii requesting a delay in implementing the TEFRA regulations regarding the major cuts in reimbursements effecting hospital-based pathologists and radiologists.

- In April, the Hawaii Health Institute will meet with Art Leland, of the National Advisory Committee, to revise for resubmission, HMA's grant proposal to the Robert Wood Johnson Foundation for Affordable Community Health Care Programs.

- Dr. Ann Catts will represent the HMA at the AMA Department of Health Care Policy meeting in Chicago, August 1983.

- A&T Printing, Inc., moved to larger and more inexpensive quarters at 1020 Auahi St. on March 15. Reorganization of personnel coupled with the move should begin to show more profitable results.

- Council approved a recommendation that the Publications Committee may request voluntary donations from authors for articles accepted for publication in the HAWAII MEDICAL JOURNAL if the author's work has been supported by a grant or institution that allows funds for publication of results. Such donations will not influence publication date.

- HCMS General Membership Meeting on April 5 at Mabel Smyth Auditorium featured an informative program presented by Ernst & Whinney, and the Hospital Division of County-State on the "Impact of TEFRA."

- The Lederle Symposium was held at the Ilikai Hotel, Sunday, April 24, on "Pain Management."

(A full copy of the minutes is available at HMA and county medical society offices for perusal by any member.)

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## NOTICES & ANNOUNCEMENTS

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## Chicago Convention

AMA Auxiliary 1983 Convention was held June 19-22 at the Drake Hotel, Chicago. Hawaii was represented at the convention by HMA Auxiliary President Carol McNamee. The convention featured outstanding speakers, policy decisions, program ideas and educational sessions.

Hawaii was allotted 2 delegates and 2 alternates. Any Hawaii auxiliary member planning to be in the Chicago area at that time was encouraged to attend the convention and participate in the sessions by Auxiliary Secretary Irene Kodani and President Carol McNamee.

\* \* \*

## Bake Sale Postscript

Home cooking pays off! Honolulu County Auxiliary raised \$390 for the Medical Library at their April bake sale. May Kim and Susan Spangler chaired this event and many Auxiliary members baked tempting treats that were happily purchased by passersby.

\* \* \*

## \$\$\$\$\$\$s for AMA-ERF

### Income

Honolulu County Auxiliary's No-Show Party received \$1,340 to be donated to the AMA-ERF Student Assistance Fund. Chairman May Kim wishes to thank everyone who helped make this non-party a success. Contributors' names will be published in the next county newsletter.

Hawaii County's Spring Fling Fashion Show netted \$1,074 for AMA-ERF. Sylvia Hammer was responsible for planning this successful event.

## Distribution of Income

### Undesignated

About \$3,800 was given to the University of Hawaii Medical School from undesignated funds allotted to Hawaii by the AMA Auxiliary. Each year the undesignated funds are distributed among the medical schools in all 50 states.

### Designated

Gifts will be accumulated throughout the year; schools will be informed of gifts monthly. Contributions will be distributed annually to medical schools as designated by the donor, at the same time as, but on checks separate from, the unrestricted Medical School Fund distribution.

While the specific program supported by the donations will be at the discretion of the individual medical schools, the money will have to be used for direct student assistance, to help support bona-fide educational expenses for medical students recognized as needy by the schools. In every case, AMA-ERF will assist that students who benefit be informed that the funds were provided by the Foundation.

The program will not require AMA-ERF to become a creditor in the eyes of the students benefiting from the fund; the foundation will not have to risk more than it has in the fund; liability will not be leveraged against AMA-ERF in event of defaults. Most importantly, the new program will provide added opportunity to call attention to the need for support of medical education and medical students.

The AMA-ERF role in financial assistance will become visible at the school and well known among the students, benefitting both the foundation and the medical families who so generously contribute.

\* \* \*

## Attention Doctors!

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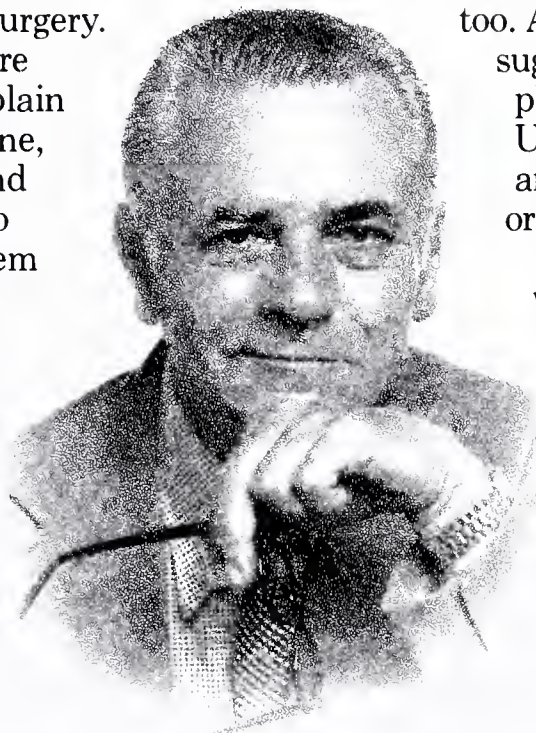
To the patient, every illness is serious, especially surgery. Today more doctors are taking the time to explain what is going to be done, why it's being done and how much it's going to cost. Patients, too, seem to be more concerned and willing to talk

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AUGUST 1983  
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# Hawaii Medical Journal

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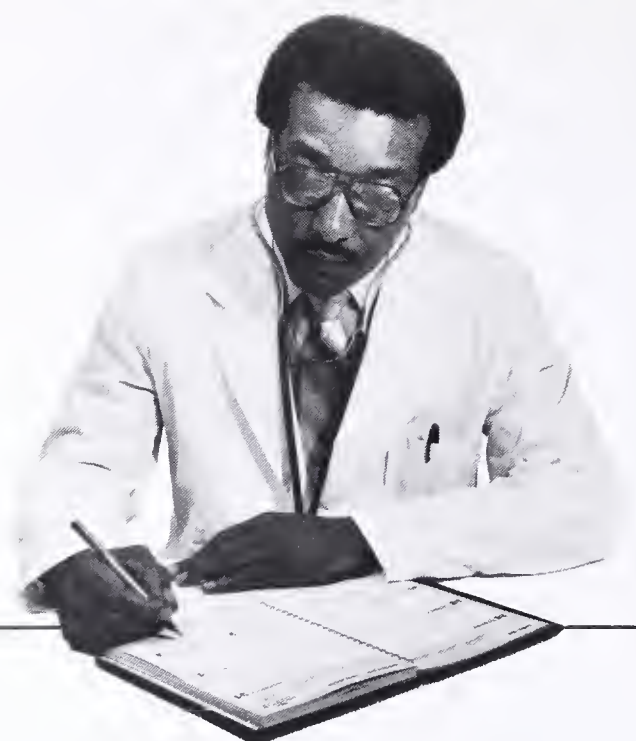
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**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion. The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindications:** Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**ORAL.** Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

**INJECTABLE.** To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used I.V.: inject slowly; taking at least one minute for each 5 mg (1 ml) given; do not use small veins, i.e., dorsum of hand or wrist; use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea; have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

**Precautions:** If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, i.e., phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over-sedation (initially 2 to 2½ mg once or twice daily; increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**INJECTABLE.** Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

**Adverse Reactions:** Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depres-

sion, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

**INJECTABLE:** Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

**Dosage:** Individualize for maximum beneficial effect.

**ORAL. Adults:** Anxiety disorders, relief of symptoms of anxiety—Valium tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

**Geriatric or debilitated patients:** Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

**Children:** Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

**INJECTABLE:** Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.) For dosages in infants and children see below; have resuscitative facilities available.

**I.M. use:** by deep injection into the muscle.

**I.V. use:** inject slowly; take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children administer I.V. slowly; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful.

In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

**Management of Overdosage:** Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, I.V. fluids, adequate airway. Use levaterenol or metaraminol for hypotension. Dialysis is of limited value.

**How Supplied:**

**ORAL.** Valium (diazepam/Roche) scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100, Prescription Paks of 30.

**INJECTABLE:** Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.





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# President's Message

## Injuries, Disabilities, and Insurance (or Where Did All the Farmers Go?)

Last month, concerns about the cost of medical education and the desire of society to control medicine were discussed. Another indication of the masses governing the practice of medicine will be brought to your attention in the following remarks.

This could easily be titled, "Where Does Responsibility Begin?" As a medical student and resident, I was fortunate to train in an area where farmers and other hardworking individuals constituted a large segment of the society. A farmer would never seek care unless absolutely necessary.

The harvest must come in for the farmer to survive the following year. A farmer with a severely ruptured disc cannot come in for definitive care until the harvest is in. Thus, he would usually come in during winter time, and was an excellent patient to treat, tolerating surgery and care well, returning to work with full motivation. This was necessary for his survival and the responsibility was his alone.

Following an exciting education and fine training, and with a genuine desire to help the injured and disabled, I started practicing in Hawaii in 1967. This major welfare state, recently claiming one of the lowest unemployment rates in the U.S. has not included among the unemployed the number of patients on total disability nor mentioned the percent of our population on workers' compensation disability.

This is a social and economic problem of serious concern. Trying to return an injured worker to work might mean seeing a patient in your office with his attorney or his union official. More often, however, the patient is seen in your office with his spouse to detail and elaborate on his disabilities. These are his rights.

Any illness could be claimed to be work-related, be it heart attack, intracranial hemorrhage, facial spasm, ulcer, tendonitis, even arthritis, if there is the slightest possibility that such illness could be related to or aggravated by work.

A middle-aged lady with recent onset of carpal tunnel syndrome was seen not long ago. Her present problems are being attributed by her attending surgeon to a fall down some stairs 11 years ago. This menopausal lady has other multiple chronic aches and pains for which she has been on long-term medications of a serious nature. A review of her records failed to show any injuries to her wrist with her fall 11 years ago. Her other hand has become involved recently, and a work-related claim is being made. Most physicians know of similar and even more flagrant cases.

A free society, of course, will demand laws, but when such laws become unreasonable, the time comes to speak out. This type of anti-social behavior is ruining our country.

For a physician, it would be easier to go along with such claims and to profit from them, but a professional person should have a special quality called responsibility. It is easier to please your patients, detail such claims for disabling aches and pains, and submit WC-2 forms and occasional reports to no-fault carriers periodically, meanwhile profiting from the situation. This is irresponsible, though it constitutes the practice of some "health care providers" who have been criticized frequently in independent medical evaluations.

Such activity becomes personally painful when a colleague or close friend does such a thing with or without realizing the true consequence of such behavior.

We live in a society where great financial benefit can be derived from disability. Unfortunately, most of us have not been trained in a school of disability, and our efforts should be to get patients well and working. Our society, however, has demanded and provided otherwise, making the earnest efforts of responsible "health care providers" extremely difficult at times.

Still, the responsibility and purpose of medical care should be to motivate and activate workers who are or claim to be injured.

Concerns of disuse and aging were brought to our attention in a special article by Walter M. Bortz, II, M.D. (JAMA, September 10, 1982), and in a recent interview with Dr. John Talbott, 80 years of age and still active. Dr. Talbott was quoted as saying, "I have always had confidence and drive. That's the reason I am still working and why I am still alive. You are alive only so long as you can go on working and producing" (JAMA, May 20, 1983). It is the physician's responsibility to stress such an attitude to our patients, even though our society rewards incompetence and prolonged uselessness.

At the start of this year, your HMA presented testimony at a hearing before the State Insurance Commissioner. This hearing was requested by the no-fault insurance carriers in an effort to reduce excessive and unnecessary health-care cost. At that time, it was recommended that a second opinion be obtained for chronic cases requiring more than 6 months' therapy. Further, "health care providers" were requested to maintain records, detailing the nature of patients' problems, such that findings could be reviewed by other "providers." In addition, patients should be provided copies of charges by these "health care providers" in a timely manner, so that the patient might determine whether the benefits received justify the cost incurred.

Increasing cost simply means increasing premiums, whether it be no-fault, workers' compensation, and even your office insurance. Society as a whole must become more responsible.

During the past legislative session, workers' compensation problems were considered but, unfortunately, no pertinent legislation resulted.

The problems will worsen. Society will end up paying for unnecessary health care plus unwarranted "disabilities."

For M.D.s, payment through workers' compensation will usually be less than that for private health care. For other "health care providers," however, there is often a marked difference upward, with increased fees and unreasonable claims. Efforts to monitor this situation are underway. Physicians can help by keep-

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ing pertinent details relative to causation and work or accident relationships when patients are first seen for any possible injury. Causation of injury should be documented in your records to prevent future problems. The demand will increase for accurate details, including return-to-work dates, apportionments, physical impairments, vocation rehabilitation potentials, and degree of disability. Efforts have been made to streamline vocational rehab problems, without much success, but this effort will continue. The doctor's office has become the center for record-keeping for these various factors, reflecting your efforts to return a patient to work.

Your HMA's Workers' Compensation Committee will be expressing your concerns at a hearing in the near future. Below are detailed some concerns and suggestions for your consideration. Some of these problems may offend a few of you, and some may be too basic, but may reinforce the experience and opinions of the majority of M.D.s. Please comment and let me know your concerns.

1. A physician may find it difficult to deny a patient's claim of work-related injury or disability. Such a patient should be referred for a second opinion. It is better to lose a patient who makes a false claim, (knowing he will go elsewhere and make the same claim), than to go along with such a situation. On the other hand, trying to help the patient realize why such a claim is wrong and trying to determine his purpose for making such a claim may be quite gratifying. Patients' social problems are often serious and there is satisfaction for the physician in helping to resolve such problems.
2. Under workers' compensation, a patient disabled for more than three months is entitled to vocational rehabilitation. With a patient disabled for this length of time, it is wise for the physician to spend time with the vocational rehab counselor who has made an effort to determine a patient's previous work habits, social and family situations, financial difficulties, and any stress situations that may be pertinent but that you may have missed. A team approach can be very helpful.
3. There is no place for drugs such as Valium, Percodan, Tylox, Tranxene, Talwin, and even codeine in the treatment of chronic pain, without obvious anatomical derangement. Such patients should have, at least, a second opinion, and social and functional problems studied, for a full understanding of the situation. I believe this problem has improved over the past few years. The best cure for drug abuse is, of course, never to start the drugs in the first place.
4. Proposing surgery for a work-related injury after prolonged disability without much evidence of disability should be done with caution, and a surgeon should have other independent evaluations and reports for review before proceeding.
5. A patient with multiple complaints and multiple system involvement from a minor injury may require a lot of the physician's time in history-taking and explanations, with necessary reassurances and efforts to motivate the patient. Problems from a minor injury should not be overtreated, and equivocal laboratory studies should not be dramatized, or disability may be prolonged unnecessarily. Patients with an injury such as a herniated cervical or lumbar disc may still return to work eventually without surgery or other definitive care; many disc patients improve simply with rest over a few months' time. So-called cervical or lumbar strain should not persist over six months, unless there is reinjury. Such strains should usually resolve within three months or less. The difference between a battered football player going back into the same game, compared with a room maid or custodian with backache going back to work after months of disability will be motivation, and compensation.
6. Physical therapy could be tried for various aches and pains for a few months, but if patient does not benefit for more than a few hours after each treatment and there is no attempt to return to work, efforts should be made to in-

*Continued on page 188*

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\*Watkin DM: Nutrition for the aging and the aged, chap. 28, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME; Philadelphia, Lea & Febiger, 1980, p. 781.

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President's Message

Continued from page 187

crease pain tolerance rather than pampering pain with ice or hot packs, or massage treatments that may only potentiate and prolong a problem. (Of course, using hot packs and then ice massage at the same session does not sound reasonable to me!)

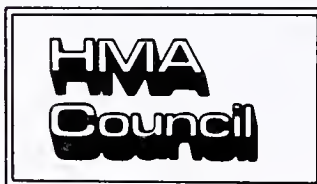
7. It could be claimed that a doctor never told his patient how to sleep, sit, or rest with his various aches and pains, but a patient with a significant problem will have already told you how he has to sit, rest, and position himself for relief.
8. Review all your WC-2 forms that are filed periodically in chronic cases. If the forms over several months remain the same, you have not done much for your patient.
9. The proper role of a physician is still to heal and motivate and not to promote disability. To be considered a "disability physician," with many disabled patients, each seen every few weeks, with medications given, no progress and few reports to demonstrate any understanding of the situation is not to practice in the best interests of society or to meet the real needs of those who come to you for help, nor does it demonstrate professionalism.

The responsibility for care of the sick and injured should be ours, and we should guard this responsibility. Other types of "health care providers" are competing in the care of the patient. We hope medicine will continue to demonstrate cost effectiveness and success, and to accept its responsibility to society and the real health care needs of the people.

Patients need to be motivated like the farmers and the 80-year-old physician, mentioned at the beginning of this discourse.

When a patient comes in to the office, with his attorney, union official, or spouse, to discuss all his disabilities, rather than requesting evaluation and care so he can return to work, the poor physician may wish he were still back in the middle west among the farmers.

Calvin C.M. Kam, M.D.  
President, Hawaii Medical Association



Highlights of the May 6, 1983 Meeting

- Dr. Russell Stodd of Maui reported plans for the HMA's 127th Annual meeting October 8-10 at the Hotel Intercontinental on Maui. Most of the speakers, from the Mainland, have already been arranged through the courtesy of several drug companies. Three local physicians will complete the program.
- The 10% across-the-board cut of Medicaid payments to all providers was one of the bills passing the 1983 Legislature.
- Becky Kendro was commended for her excellent efforts and achievements as lobbyist for HMA in 1983.
- HMA rejects the concept of public advertising of prescription drugs, following concerns expressed by Dr. Russell Hicks, chairman of Substance Abuse Committee.
- Regarding physicians practicing outside their specialty, training or expertise, Council passed a policy statement urging members to confine their practice, commensurate with their training, experience and demonstrated ability, and make professional decisions in the best interests of the patient; that the quality of care and patient safety be the primary consideration; that standards of performance be equal, whether in an out-patient or in-patient setting.
- State budget cuts are expected to cause great problems for county, state hospitals, according to Dr. William Iaconetti of Maui. Council voted to support private enterprise in the administration of hospitals in Hilo, Kona, and Maui.

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# The Indentations of Law and Psychiatry

William J.T. Cody, M.D., F.A.P.A., Honolulu

Twenty-five years ago I was serving as a staff psychiatrist in Washington, D.C., at St. Elizabeth's, a federal hospital which, at that time, had more than 7,000 patients. The superintendent then was Dr. Winfred Overholser, a distinguished forensic psychiatrist.

Dr. Overholser asked me one day if I would be interested in moving to the forensic psychiatry service as assistant chief of that service. This represented a unique opportunity for me for several reasons: the Durham rule had been established only two years earlier; Judge David Bazelon of the District of Columbia Court of Appeals was extremely active in the "insanity plea" field; Dr. Overholser was widely respected and was interested in teaching his art and craft; and the forensic psychiatry service at St. Elizabeth's was exclusively for patients with legal charges of one sort or another pending against them.

Forensic psychiatry refers to the application of psychiatric knowledge and techniques to legal procedures in order to deepen understanding and aid in the administration of justice. The field of forensic psychiatry today is vast, built up heavily in the last few decades by increased awareness of civil rights and the problems of crime and punishment, plus challenges to tradition and custom in every area.

It was unheard of 30 years ago for a son to sue his parents for improper parenting.

The promises of psychiatry have, by and large, not materialized, and psychiatrists today widely disclaim any ability to predict dangerousness, for example. On the other hand, psychiatrists can effectively treat psychotics, but then run into the question in court, "Is this defendant competent only by virtue of medication and, if so, is this an unnatural state?" Can someone be unnaturally competent for trial?

A great deal of semantic confusion reigns in the alliance of law and psychiatry; unfortunately, it has not yielded to reason, partly because terms have a way

of becoming imbedded in the literature. When doctors speak in legal terms, they think they are using terms with well-established meanings, e.g., "insanity." When lawyers speak in medical terms, the same thing is true, e.g., "psychosis." Ten men on either side will give you 10 different definitions of the terms and all 20 believe they have communicated and shared, but, alas, the situation is more like two ships silently passing each other in the night! The material which I present illustrates something of this point.

## Civil law

### Marriage

The legal capacity to marry is the "ability to understand the nature of the marriage contract and the duties and responsibilities that are inherent in such a contract." Marriages may be dissolved through divorce or annulment. If psychiatric factors are involved, the issues are usually related to mental incompetency of one kind or another. Thus, if it is clear that, at the time of the marriage one party—through psychosis, alcohol or drug intoxication—did not truly understand the obligations and responsibilities assumed, annulment or divorce may be granted, but the evidence must be convincing.

In a case decided by the Supreme Court of North Dakota (*Johnson v. Johnson*),<sup>1</sup> the plaintiff-husband instituted an action for annulment of his marriage on the grounds that he, at the time of his marriage to the defendant, was "feeble-minded and a common drunkard." The history showed that he had entered a hospital for treatment of delirium tremens and alcoholic cirrhosis. This treatment was carried out and it was arranged for him, after discharge, to enter a mental hospital for further treatment. After leaving the first hospital, he and the defendant stopped off on their way home to marry—the license having been obtained while he was a patient in the first hospital. The husband's action was denied on the grounds that the evidence failed to prove a lack of requisite mental

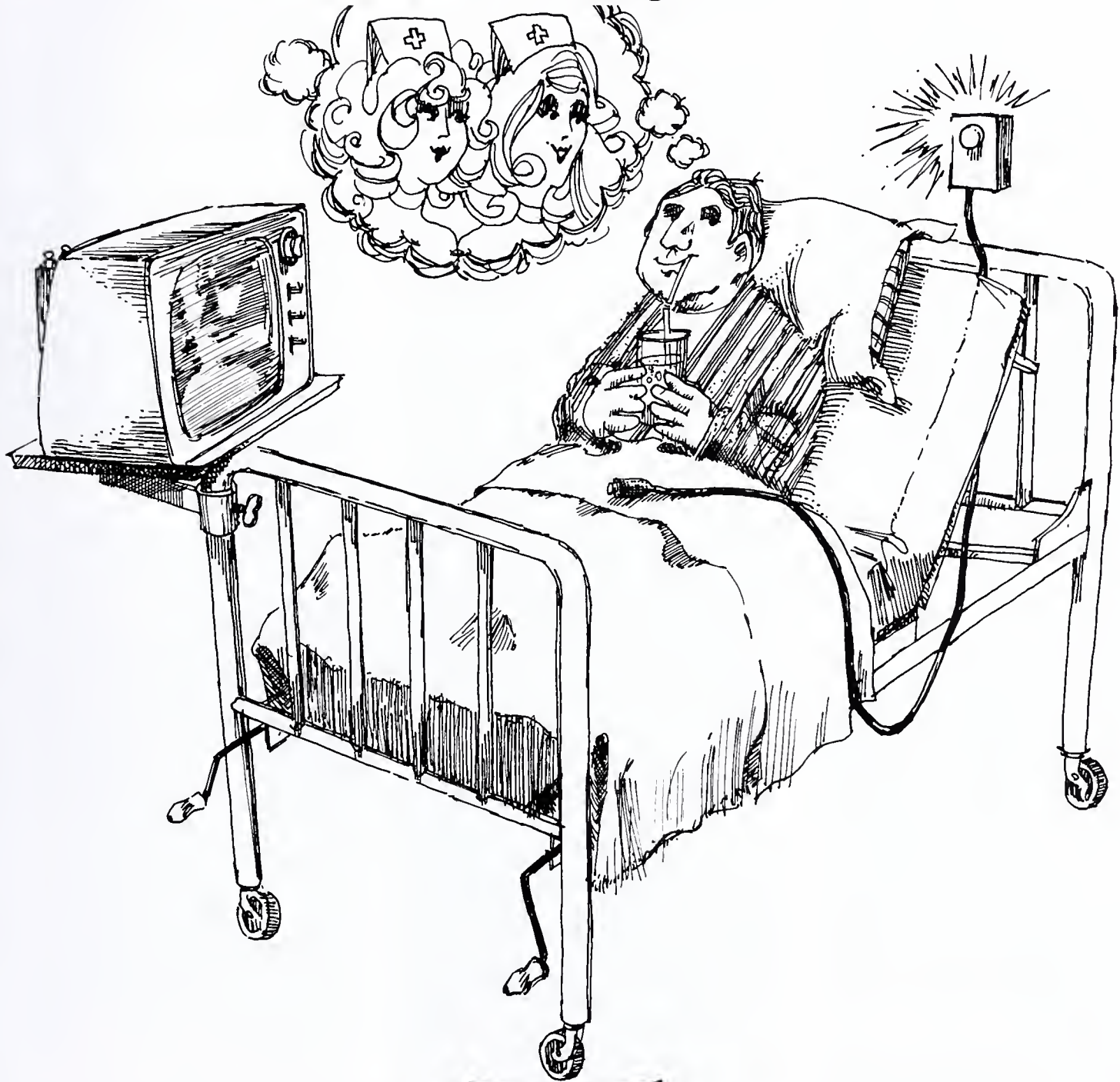
capacity to contract a valid marriage.

Fraudulent concealment of mental illness often forms the basis for a petition for annulment or divorce. In general, when a plea for annulment is entered on this basis, the courts usually will not annul such a marriage because adults are assumed to be capable of looking before they leap and are expected to show reasonably mature judgment in their choice of partners. But there are occasional exceptions, to be sure. In a case decided by the Maryland Court of Appeals (*Holland v. Holland*),<sup>2</sup> the plaintiff-husband petitioned for annulment of his marriage, on the grounds of fraudulent concealment before marriage by his wife of the facts of her hospitalization and diagnosis of paranoid schizophrenia. His wife had appeared to react normally to everyday occurrences during the courtship and for a short period of married life. However, shortly after the marriage, she became dangerously violent and attempted to kill both him and his mother. In this case, the court felt that concealment of prior insanity amounted to fraud, thereby invalidating the marriage. Thus, this petition was granted. The following petition was not: In a New York case (*Hammeister v. Hammeister*),<sup>3</sup> the fraud alleged by the plaintiff-husband consisted of his wife's concealing from him the fact that her mother had been a patient in a state mental hospital for many years. He alleged that this concealment was for the purpose of inducing him to enter into the marriage and, had he known the facts, he would have refused. There was no allegation that the wife had been or was becoming mentally ill. The court held that this alleged concealment was not a matter vital to the marriage relationship.

Sexual factors are often involved. A Municipal Court of Appeals for the District of Columbia<sup>4</sup> granted an annulment to a husband who brought action to annul his marriage on the ground of his physical incapacity to consummate it because of "psychological maladjustment." The testimony of the husband's psychia-

*Continued on page 192*

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trist was decisive. He stated that the husband's mental condition prevented him from consummating the marriage; that he was completely impotent and that psychogenic causes had either actually prevented or made it impossible for him to have sexual intercourse. It is not clear what the psychological factors were in this case, but in some cases concealed homosexuality may be a contributing factor.

Many states have enacted laws providing for divorce or annulment if one of the parties becomes insane, is hospitalized for a stated period (usually 3 to 5 years) and is judicially determined to be "incurably insane." An "incurable insanity" must be sustained, without episodes of improvement. If the patient shows remissions, the suit may be void. In a New York case (*Angelo v. Angelo*),<sup>5</sup> the wife who was the defendant successfully contested her husband's action for annulment or divorce based on alleged incurable insanity for five years or more, by proving that she was actually an outpatient from the hospital for the preceding two years and had been successfully employed. Furthermore, her psychiatrist testified that he found no signs of mental illness.

This protection by the law of the mentally inadequate citizen can be traced as far back as the Talmud,<sup>6</sup> wherein it is urged, "A sane man who married a sane woman who subsequently became insane, he should not divorce her."

Occasionally a divorce petition is brought on the grounds of desertion, it being alleged that long confinement of a person in a mental hospital constitutes desertion and/or cruelty to the spouse. Courts generally hold that confinement in a mental hospital is not desertion since it is not voluntary. Sometimes a suit for annulment or divorce is brought on grounds of cruelty, where the hospitalized spouse contends that the mate outside the hospital participated as a petitioner in the commitment process. Here the courts generally hold that the petitioner was acting for and in the best interests of the patient.

Divorce has become almost as much of an institution as marriage. Psychiatrists and attorneys are frequently involved in the post-traumatic consequences of divorce, such as suits for alimony, petitions for child support and demands for child custody. In the *Matthews* case,<sup>7</sup> a California Court of Appeals reversed the decision of a lower court, wherein the wife in a divorce action was ordered to seek mandatory psychiatric treatment in order to make her a more amenable person in the working out of visitation rights to her children. The wife had contended that requiring her to undergo involuntary psychiatric therapy for an indefinite

period of time was beyond the court's authority and violated her due process rights since it constituted a violation and fundamental restriction of her liberty. Incidentally, had this wife sought custody of her children in the early part of the 19th century, she might well have had no grounds. Early English common law gave the father, by virtue of his position in society, an absolute right to custody. One of the first men to lose custody of his children was the poet, Percy Bysshe Shelley, who, in 1817, was denied custody because of his publicly stated atheistic beliefs.

### Wills

In order to make out a valid will, a person must establish "testamentary capacity." What this involves is that at the time of making out a will, the testator must know three things: (a) the nature of his act (he must know he is making out a will); (b) the nature and extent of his property; and (c) the "natural objects of his bounty" (living relatives, friends, institutions, etc.). Wills, of course, may be challenged and if the size of the estate is considerable, there may well arise adversarial proceedings. Attempts will be made in court to show that the testator was mentally incompetent in any one or any combination of the above three requirements. Such items as peculiar inclusions (or omissions) in the list of beneficiaries or a lack of internal consistency within the document may suggest to the physician the presence of mental illness or senility existing at the time of creation of the will. In some cases, manipulation by others may have taken place and the law warns of "undue influence and overreaching persuasion practiced on a mind weakened by age."

An uncomplicated New York case (*Honigman*)<sup>8</sup> involved the contest of the husband's last will and testament by his widow on the grounds that when he executed the will, he lacked testamentary capacity because of his delusion that his wife was unfaithful. Indeed, his bizarre beliefs and behavior—in an otherwise long and happy marriage—were well documented by testimony supplied by a large number of disinterested persons. The couple had been married 40 years and during the last year or so he publicly and repeatedly accused her of hiding male callers in the cellar of their home, in various closets, under the bed and of hauling men from the street up to her second-story bedroom by the use of bed-sheets. The court defined the applicable test as follows, drawing on a very early case, the language of which well illustrates a struggle in semantic quicksand: "If a person persistently believes supposed facts which have no real existence except in his perverted imagination and against all evidence and probability conducts himself, however logically, upon the assumption of their existence, he is under a morbid delusion and delusion in

that sense is insanity. Such a person is essentially mad or insane in those subjects though on other subjects, he may reason, act and speak like a sensible man."

Testamentary capacity concerns itself only with the decedent's mental condition at the time of the execution of the will, regardless of the condition of the mind at prior or subsequent times.<sup>8,9,10</sup> If any contest of a will is anticipated, the testator's lawyer would be well advised to secure solid evidence of testamentary capacity at the time the person creates his will. In fact, video-tape documentaries have been employed. Failing this, if the will is subsequently contested, attorneys may well call in psychiatrists to testify for either side and a swampland of hypothetical questions will undoubtedly ensue.

### Contracts and deeds

In general, the law requires a higher degree of mental capacity for a valid contract than that required for wills, the theory being that a will is made at leisure and without pressure, whereas in the case of contracts and deeds the individual must be able to withstand the pressures of salesmanship and must be able to give-and-take in a relationship with the other party. Other important qualifications include a good memory, a reasonable degree of mental alertness and good contact with reality.

There are many instances of elderly persons who were tricked into agreements they did not clearly understand because the proposal was presented in misleading, ambiguous and dishonest statements. However, sometimes it works in reverse, where an elderly person tries to get out of a contractual responsibility by claiming lack of mental capacity and ends up losing the case. In a Georgia case,<sup>11</sup> the 85-year-old petitioner, feeble both physically and mentally, claimed she suffered from poor eyesight and inability to read a contract she had made for sale of timber. She brought action to cancel the contract; however, the court found that in her business negotiations and decision to sell the timber, there was no evidence at all of her alleged lack of mental capacity to execute a contract. The court concluded, "Contradictory or ambiguous pleadings must be construed most strongly against the pleader."

In a very different context, the Michigan guardian<sup>12</sup> of a mental incompetent petitioned the court to set aside certain deeds executed by the incompetent because of chronic alcoholism. The court concluded that most of his trouble was caused by intoxication but that the evidence was that the deeds were executed when he was sober and during lucid occasions and were, therefore, valid.

### Guardianship

Mental disability may render a person incapable of acting in his or her own behalf, just as may physical disability. In



such a case, a court may—after due evidence at a hearing—appoint a guardian, one who acts for the patient, one who is under the control and supervision of the court and one who is legally obligated to oversee the proper care of the person, property and rights of the one judicially declared to be unable to do for himself. A guardian *ad litem* is a person appointed by a court to protect the interests of an individual not of legal age or who is otherwise incompetent and who is a party to litigation before the court. It is very important that the patient be represented by a guardian *ad litem* in any legal proceeding; for example, in the Collins<sup>13</sup> case in Georgia, a divorce decree was obtained by the wife on the grounds of habitual intoxication of her husband. The trial judge in the divorce proceeding was not apprised of the fact that in a prior proceeding, the wife had had the husband declared mentally incompetent and committed to a VA hospital. No guardian, either of his person or property, was appointed at that time and he was therefore not represented by counsel in the divorce proceeding. The Supreme Court of Georgia ruled in favor of the husband's suit to set aside the divorce decree and indicated, "it is a well-settled rule of law that a judgment rendered against an insane person who has no legal guardian and for whom no guardian *ad litem* has been appointed for the purpose of appearing for him in that proceeding, (that judgment) is voidable."

Guardianships may be terminated when restoration to competency has been granted. In an Ohio<sup>14</sup> case, the patient had been declared incompetent because of longstanding problems with alcohol, drugs and marriage. When he sought restoration to competency, the court agreed, holding that the test is "whether the ward has made substantial progress and whether he is at present competent to manage his affairs, both personal and financial. We feel that it is entirely too speculative to hold that the restoration to competency should be indefinitely postponed and delayed because there might be future marital difficulties or because there might be return to the excessive use of alcohol or drugs which might cause the condition to reappear."

Many differences exist between concepts of legal incompetency and mental incompetency. Whether we all know what we are talking about in using such terms is far from clear. The Supreme Court of Oregon,<sup>15</sup> in a guardianship appointment affirmation, stated the following rule: "Whatever may be the rule in other jurisdictions, we do not deem our statutes to be limited to a consideration of mental incompetence alone. Incompetency is defined by statute in this state as every person who is, by reason of old age, disease, weakness of mind or from any other cause, unable unassisted to properly manage to take care of himself or his

property and by reason thereof, would be likely to be deceived or imposed upon by artful and designing persons." Thus a person need not be insane to be mentally incompetent. Competency remains a vexing issue. In the field of criminal law (v.i.), the question of competency for trial often arises. There is some evidence (Slovenko)<sup>16</sup> that petitions for judgment of mental incompetency for trial are increasingly being used as a device to procure an otherwise unobtainable psychiatric examination which, in turn, is used later for plea bargaining and in sentencing.

Finally, suggesting that guardianship and competency issues are taking us to new frontiers, we have the situation in Massachusetts where as a result of the Rogers versus Boston State Hospital,<sup>17</sup> a guardian *ad litem* may have to be appointed for each hospitalized involuntary patient in order to approve or disapprove anti-psychotic medication. In that case Judge Joseph Tauro ruled that patients had a constitutional right to refuse medication, "except where there is a substantial likelihood of . . . extreme violence, personal injury or attempted suicide." His order applied to both involuntary and voluntary patients. The judge further remarked, "Whatever powers the Constitution has granted our government, involuntary mind control is not one of them. The fact that mind control takes place in a mental institution in the form of medically-sound treatment of mental disease (does not warrant) an unsanctioned intrusion on the integrity of a human being."

Psychiatrists comment that mental illness is itself an involuntary mind control of the most extensive kind and, while the physician seeks to liberate the patient from chains of illness, the court apparently is aiming at the chains of treatment.<sup>18</sup>

Applebaum and Gutheil point out that by exercising their right to refuse treatment, patients may be forfeiting their right to eventual freedom from illness and hospitalization. At the worst, the patients may have won by this decision the "right to rot with their rights on." Another writer termed this right to refuse treatment as "life, liberty and the pursuit of madness."<sup>19</sup>

### Torts

My final discussion under civil law is of *tort* (a French word meaning "wrong"), referring to cases where personal damage is suffered by an individual on account of the negligent or wrongful act of another. There are 3 types of tort action of which negligent tort covers the bulk of malpractice cases, auto accidents, industrial accidents, suits against hospitals, etc. Malpractice has been called "the law of the bungle." To be successful, a plaintiff's attorney must prove: (a) a legal duty of care existed; (b) which the defendant (physi-

cian or hospital) fulfilled negligently; (c) as a result of which damages accrued to the plaintiff-patient (or estate); and (d) that these damages were substantial.<sup>20</sup> In relative frequency of malpractice suits, psychiatry ranks eighth.

There are certain malpractice risks that are primarily psychiatric: (a) problems of treatment, most often involving electroshock treatment where, for example, consent was allegedly unauthorized or the treatment was negligently administered; (b) problems of commitment and hospitalization—involving alleged negligent mental examination, improper commitment procedures, false imprisonment in a hospital, etc.; (c) problems of suicide of the patient; and (d) problems of patient's assaultiveness. (In the Tarasoff case in California, after 14 months of deliberation, the California Supreme Court ruled that a psychotherapist who has reason to believe that a patient may injure or kill someone must notify the potential victim, his relatives, his friends or authorities.)

Other psychiatric malpractice risks include allegations of improper divulgence of information, sexual intimacy with patients and drug-induced disease from psychopharmaceutical prescriptions.<sup>21</sup> Even psychotherapy itself is not immune to suits, but an allegation of mal-psychotherapy is as difficult to establish in law as is, say, that of mal-education.

### Criminal Law

#### Accountability

The issue of accountability or criminal responsibility is at once a simple basic question and a profoundly complex set of answers. The basic decision required is whether the accused shall be held responsible for his alleged criminal conduct. This vexing problem has been with Western society since at least as far back as ancient Hebrew and Greek laws were set, recognizing that deaf-mutes, idiots and minors—when they cause harm—could not be held responsible because of lack of intentions. This concept threads through the dark ages and reappears in English law in the 13th century, when Judge Bracton promulgated the test which defined a madman and his lack of culpability, "one who does not know what he is doing, who lacks in mind and reason and who is not far removed from the brutes."

By 1723, the test seemed to define insanity as bestiality—"to escape punishment, a person must not know what he is doing, no more than a wild beast." Thirty-seven years later, the terms "right and wrong" were substituted for the more medieval "good and evil" and are still with us, more than 200 years later.

In 1800, the Hadfield case became a landmark. Hadfield was a paranoid schizophrenic with the delusion that God was about to destroy the whole world and

*Continued on page 194*



the only possible prevention of this catastrophe was for Hadfield to sacrifice his own life. He did not want to commit the moral crime of suicide, so he shot at King George III, not intending to kill or even hit him; but he reasoned that for such an act, the state would execute him. The prosecution in that case told the jury that in order to exonerate Hadfield, "there must be a total deprivation of memory and understanding." The court-appointed defense attorney, Thomas Erskine, remarked in a famous reply that if that definition of insanity were meant to be taken in a literal sense of the word, then "no such madness ever existed in the world." Hadfield was exonerated.

#### *The M'Naghten Rule*

On January 20, 1843, Daniel M'Naghten, a demented Scottish woodturner, fatally shot Edward Drummond, secretary to the Prime Minister, as Drummond was entering a government office in London. M'Naghten had a delusion that he was being persecuted by Tories and he decided to fight back. But he had mistaken the secretary for the Prime Minister, the chief Tory. At his trial, nine physicians and surgeons all testified that he was insane and the Lord Chief Justice Tindal directed a verdict of "not guilty by reason of insanity."

This acquittal was not the end but rather the beginning of this celebrated case because the verdict created a furor and a few days after the trial the case was debated in the House of Lords. The Prime Minister was a famous man, the times were turbulent, and Queen Victoria herself was so outraged by the acquittal that she directed the House of Lords "take the opinion of the judges on the law governing such cases." The results of the deliberation of those 15 judges is what has become known as the M'Naghten Rule, which states "The jurors ought to be told in all cases that every man is presumed to be sane, and to possess a sufficient degree of reason to be responsible for his crimes until the contrary be proved to their satisfaction; and that, to establish a defense on the ground of insanity, it must be clearly proved that at the time of the committing of the act, the party accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing; or if he did know it, that he did not know that he was doing what was wrong."

The M'Naghten Rule, plus the so-called "irresistible impulse test" which asks, "Was the accused a free agent in forming the purpose to commit crime?" (would the person have yielded to that impulse had there been a policeman at his elbow?), prevailed in most jurisdictions for about 100 years. There are several criticisms of this so-called "right-wrong"

test. First, it misses the point entirely, because, whatever insanity means, the term refers to many abnormal conditions of mind that cannot all be gathered together under the rubric, "disease of mind." Secondly, the test assumes that the incapacity to know the nature and quality of an act and its wrongfulness is the only significant criterion of responsibility. Third, most people know the difference between right and wrong unless they are senile, severely mentally retarded or in a toxic delirium; such afflicted persons rarely commit crimes. Fourth, the test generally limited the contributions of psychiatric testimony so that insanity was defined exclusively in terms of extreme psychosis and/or obvious organic deterioration. Finally, it was never clear just what was meant by "nature and quality of the act." But the M'Naghten rule did reflect traditional morality governing the conduct of normal persons, and the fact that it persisted so long historically suggests that alternative tests were not only inadequate but very difficult to come by.

Enter Monte Durham: In July 1951, Monte Durham, at that time 23 years old, broke into a Georgetown home and was caught pilfering clothes. He had been three times in mental institutions, diagnosed: "psychotic with psychopathic personality" and had a 7-year-long criminal record of passing bad checks, embezzlement, car theft, parole violation and attempted suicide. When this case went to trial, the judge (who heard the case without a jury) strictly applied the M'Naghten test and rejected the psychiatric testimony because the government psychiatrist declined to answer categorically the question: "Did Durham know the difference between right and wrong?"

The case was then appealed to the United States Court of Appeals for the District of Columbia where David Bazelon was presiding judge. He wrote, "The right and wrong test doesn't take sufficient account of psychic realities and scientific knowledge. It is based on one symptom and so cannot be validly applied in all circumstances. The irresistible impulse test is lacking in that it gives no recognition to mental illness characterized by brooding and reflection, and so relegates acts caused by such illness to the application of the right-wrong test. We need a broader test." He then went on to promulgate the new test which was, "It is simply that an accused is not criminally responsible if his unlawful act was the product of mental disease or mental defect."

However, judges, juries and expert witnesses soon became mired in confusion over the terms "mental disease" and "mental defect." Also, the term "product" led to controversy as to when is an act a product of a mental illness and when is it not. (Other formulations stumble into the same difficulty—The American Law Institute proposal uses the

phrase "as a result of.")

David Bazelon was optimistic that, as a result of the new formulation, psychiatrists, for the first time, would be able to testify more fully and adequately in courtrooms, the law would be enriched by a much broader exposition of psychiatric knowledge given about any defendant, and the theoretical strait-jacket of the M'Naghten Rule would no longer block testimony in criminal law cases.

It was his fate to be disappointed in the results. Case after case showed that the same muzzling of psychiatric testimony was going on and that the rules of evidence were manipulated to discourage any testimony which one side or the other did not want heard. The spectacle of psychiatrists on opposite sides of a case, each testifying to the truth as he saw it, undermined public confidence in psychiatric testimony, despite the acknowledgment that other medical specialists, such as radiologists, could disagree in interpretations of facts; and notwithstanding the entire structure of the law is built on the assumption that there can be two sides to any given question.

But the difficulties continued—a mental disease was described as something which was progressive; a mental defect was considered permanent. In the McDonald case, 1962, Bazelon wrote "The jury should be told that a mental disease or defect includes any abnormal condition of the mind which substantially affects mental or emotional processes and substantially impairs behavior controls."

Finally in 1972, in the Brawner case, the full Court of Appeals, sitting *en banc*, including Judge Bazelon, decided to discard Durham and adopt in its place the American Law Institute's test, as described in its model penal code. This test is as follows: "A person is not responsible for criminal conduct if, at the time of such conduct, as a result of mental disease or defect, he lacks substantial capacity either to appreciate the criminality (wrongfulness) of his conduct or to conform his conduct to the requirement of the law."

Judge Bazelon, writing in Brawner for himself alone, proposed a standard designed to bring the moral issue into plain view: "A defendant is not responsible if, at the time of his unlawful conduct, his mental or emotional processes or behavior controls were impaired to such an extent that he cannot justly be held responsible for his act." Bazelon felt that this test would ask the psychiatrist a single question—"What is the nature of the impairment of the defendant's mental and emotional processes and behavior controls?"—and leave for the jury the question whether that impairment is sufficient to relieve the defendant of responsibility for the particular act charged. But the Court of Appeals chose the American

*Continued on page 196*



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Law Institute rule instead.

It should be remembered that the defense of insanity has rarely been a defense which resulted in automatic freedom for the acquitted defendant. First kings, then courts, routinely operated on the assumption that a "not guilty by reason of insanity" verdict should result in restraint of the defendant, not release. Also, the insanity defense is relatively rare; but when used, it arouses great interest and controversy far out of proportion to the number of cases in which it is of immediate practical importance.

The insanity defense is one of the few means we have for focusing public attention on what little we do know about the causes of crime and, as such, it may serve to point the way towards our learning how to become a less violent society.

### Ezra Pound

We turn now to a scene in Pisan, Italy, 1945—the United States Army Disciplinary Training Center, which included a row of steel cages. One of America's most famous poets was located in such a cage, the excuse for his being there that the Fascists might attempt to rescue him. All personnel were ordered to stay away from him and not speak to him. He was denied visitors, writing materials and books. This treatment was entirely the opposite of what he had expected.

Ezra Pound had turned himself in to American occupying forces in Rapallo, Italy, as early as possible. He had expected to be welcomed and returned to the United States, where he would act as adviser to the President and straighten the country out in its error of going to war at the persuasion of "Jewish bankers." Instead, he was arrested and kept under rather barbarous conditions for several months in the Disciplinary Training Center, during which time he suffered a severe emotional collapse.

He was packed onto a plane and taken to Washington, D.C., on November 8, 1945. He was arraigned the next day on a charge of treason. Pound asked for permission to act as his own counsel but was told the charge was too serious for that. A formal arraignment was set for 9 days later and Pound was represented by Julien Cornell of New York. The true bill had 19 specifications, the essence of which was that Ezra Pound gave aid and comfort to the Kingdom of Italy and its military allies, the enemies of the United States, through his various radio broadcasts over the Italian radio. The indictment was for treason and, if convicted, the prisoner faced a mandatory death penalty by electrocution.

It was quickly discovered that Pound might not be able to stand trial and so, by order of the court, he was transferred to

Gallinger Municipal Hospital for psychiatric examination, where he was soon interviewed by four prominent American psychiatrists.

Dr. Winfred Overholser was one of the examining four, and he spoke for the others when he said, "There is no question Mr. Pound has a very high degree of intelligence, (but) he is extremely free in his conversations, he speaks in bunches of ideas, his production is unusually hard to follow, he rambles around and has a very naive grasp of the situation in which he finds himself." Pound was sure that he should not have been brought to this country as a prisoner but rather as someone who would be of great benefit to the United States as a diplomat in its post-war activities.

Dr. Overholser continued, "His statements about much of his life were vague, almost incoherent; he glorified in his rebelliousness and should he undergo trial, it probably would be impossible for him to consult with counsel and defend himself against such a serious charge."

The government wanted very much to try Pound and had not accepted the unanimous finding of the four psychiatrists as final; hence, the Attorney General's Office moved for trial on this question in order to resolve formally and publicly the issue of his mental condition. As a result of a trial on February 13, 1946, the jury brought in a verdict after a 3-minute deliberation—Ezra Pound was of unsound mind. He was remanded to St. Elizabeth's Hospital in Washington.<sup>22</sup>

Ezra Pound was born in 1885 in Idaho, but grew up in Philadelphia. He graduated with honors from Hamilton College, mastered 9 languages, sailed for Europe shortly after graduation and spent most of his productive adult life in Europe. He wrote poetry, edited journals, maintained a voluminous correspondence, was a friend of Yeats, Joyce, T.S. Eliot, and e.e. cummings, and rendered enormous service to the cause of English and poetry.

With his flaming red beard and peculiar garb, he was a striking figure in London society. Shortly after World War I, he moved to Paris, where he was extensively involved in the literary and artistic world there. He maintained a vast correspondence, visited Venice many times and finally, in the '30s, moved to Rapallo, Italy, where he continued to work and write.

Somewhere along the way, Pound became enamored of a certain unclear economic philosophy.<sup>23</sup> He fell into abusiveness, became sarcastic, critical, and markedly anti-Semitic, spoke of Churchill, Roosevelt and the New Deal in libelous terms, and urged Americans to return to the patriotism of Adams and Jefferson. He had done much translating of Confucius' works into English and believed that some mixture of American democracy and Confucianism was

needed to save the world.

When he was offered the opportunity to broadcast over Italian radio, he seized upon this as a much larger classroom for the exposition of his ideas. Many of his broadcasts were highly critical, even contemptuous, of the policies of the United States and its allies. Anyone who has read the transcripts of these broadcasts finds they make very little sense, are loaded with polemics, filled with non sequiturs, unclear references and slang. By no stretch of the imagination could these talks give aid and comfort to the enemy. In fact, there was a rumor that the Italian government was so suspicious after awhile of the peculiar content of the broadcasts, they wondered if he was broadcasting in some kind of code to the Allies!

Pound began as a mental patient at St. Elizabeth's in 1946 in Howard Hall, a grim antiquated structure from the 19th century. He was there over a year, surrounded by grossly psychotic persons, all of whom were under criminal charges. He was then 61 years old, tired, and unable to understand his predicament sufficiently well to defend himself. He knew, of course, he had been charged with treason, but he always denied it, saying "the treason was in the White House, not in Rapallo." He never saw what he had done as reasonable.

After a year and a half, he was moved to a more open, pleasant ward where he had a room to himself, a room destined to be termed "one which contained a national skeleton." Pound never deviated from his garrulous, rambling, incoherent ways and, as the years passed, no motion was made to bring him to trial.

He won a prize from the Library of Congress for \$1,000 in 1949 for the best American poetry written that year—"The Pisan Cantos"—which antagonized his enemies anew, leading to claims that he was actually sane and should be brought to trial and justice. Pound received visitors, his wife was there daily, he continued a worldwide correspondence and continued to work.<sup>24</sup>

More years went by and, finally, under the agitation of Robert Frost, who obtained testimonials from famous poets all over the world, things got moving. Even the conservative Life magazine made a strong plea for his release in a 1956 editorial. Private negotiations were undertaken with the FBI, with Pound's long-time attorney, with Mrs. Pound and with a Washington law firm. In April 1958, a motion was brought in the United States District Court for the District of Columbia to dismiss the indictment. Dr. Overholser from the hospital supported this motion, saying that in his opinion, "the patient was, is and has continuously been insane and mentally unfit for trial." He

*Continued on page 198*



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described Pound's condition as permanent and incurable, "that it will not and has not responded to treatment, that further professional therapeutic attention under hospital conditions would be of no avail and produce no beneficial results and that he is permanently and incurably insane."

Dr. Overholser went on to say that, in his judgment, "there is no possibility that the indictment can ever be tried and that Mr. Pound will die insane in St. Elizabeth's Hospital without trial of the charges against him if the indictment remains pending." He added that he felt it was very likely that Pound was insane at the time of the commission of the crime charged, that Pound was not a dangerous person and his release would not endanger the safety of other persons or the property and interests of the United States. He concluded that "further confinement can serve no therapeutic purpose and it would only be a needless expense and burden upon the public facilities of the hospital."

Robert Frost submitted a statement, as did John Dos Passos, Van Wyck Brooks, Marian Moore, Ernest Hemingway, Carl Sandberg, W.H. Auden, T.S. Eliot, Archibald MacLeish and others.

The court took all of this under consideration and eventually concluded that the government was not in a position to challenge the medical testimony, and so the government consented to dismissal of the indictment in April 1958.

#### *Pound's Mute Depression*

Soon afterwards, Pound returned to Italy, apparently went into a depression, became almost mute, said he regarded most of his work as worthless, and died in November 1972 at the age of 87. He lies buried on an island of Venice, near the grave of another distinguished artist, Igor Stravinsky.

To me, the Pound case is an illustration of how far we have come in 25 years. Today's lawyers would have had him released in a much shorter time. They could have challenged the confinement, alleging that there is something inherently wrong in depriving a man of his liberty for 12 years, a man presumed innocent and who never was proved guilty. Ezra Pound could have sued the U.S. Government for such issues as failure to provide proper psychiatric treatment or the possibly unconstitutional deprivation of his liberty, not to mention the government's cruel and unusual punishment of him in the camp in Pisan. None of this ever happened, mostly because of the climate of acceptance in those days of tradition and respect for the status quo. Other factors included the fame and importance of the defendant, a complex man against whom no one really could figure out how to pro-

ceed. And finally, the treason charge, a matter about which no one could be neutral.

It was one of the ironies of the case that Pound was regarded by most Americans as a traitor whereas he regarded himself as a superpatriot, a kind of latter-day Paul Revere, trying to wake up and warn the country of its peril. In the end, Ezra Pound "did time" and, during those 12 years, nationalistic fevers cooled, the memories of witnesses faded and the national conscience finally roused itself to acknowledge sympathy and compassion. Pound's leave-taking day at St. Elizabeth's was for me, a shining hour for law and psychiatry.

#### Conclusion

In closing, let me quote from one of the wisest of men, Hippocrates, who wrote in one of his essays known as "The Art," the following words which doctors and lawyers both should heed:

"For if a man demand from an art a power over what does not belong to the art, . . . his ignorance is more allied to madness than to lack of knowledge. For in cases where he may have the mastery through the means afforded by an art, there we may be craftsmen, but nowhere else."

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Harry L. Arnold Jr., M.D.

Lab techs! Do you have to put on and take off caps of various sizes on test tubes and bottles—and would you like help with it? Look into a new device, the "CapSter," from BioCell's Product Development Laboratory, that does just this. Mr. Sardoff or Ms. Richman at Gordon Wolfe, Inc., 342 Madison Ave., New York, N.Y. 10173, will fill you in on its availability.

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*IV fluids for the terminally ill and comatose are just as heroic and extraordinary a measure as respirators are, and they're given largely to "appease the consciences of managing physicians and the ancillary staff," says Kenneth Micetich, M.D., in the May 1983 Archives of Internal Medicine. The prolongation of dying, he says, is not a physician's proper role.*

\* \* \*

The *Medical Abbreviations Handbook*, an updated, expanded, and revised edition of the "Quick Directory of Medical Abbreviations" put out a few years ago by Medical Economics, is available from them now (Oradell, N.J. 07649) at \$7.95. Plus \$1.50 for "handling."

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\* \* \*

Seminars to explain to physicians or hospital personnel the meaning of Diagnosis-Related Groups, Major Diagnostic Categories, ICD-9-CM diagnosis and procedure coding, and Section 223 limitations were held in various cities in July by the Commission on Professional and Hospital Activities, an ACP-ACS-AHA-sponsored organization. Phone them at (313) 769-6511—collect—to inquire about future seminars.

\* \* \*

*A new nitroglycerine administration set which has polyethylene tubing and permits less than 10% absorption of nitroglycerine is announced by Abbott. A uniquely versatile electronic flow controlled Enteral Pump Set with Integral Container is an-*

nounced by Abbott. It has a 1-liter reservoir in the set line.

\* \* \*

Moisturizing a dry mouth isn't easy; water and lemonade and pickles don't do it well; but Kingswood Laboratories at Box (P.O.: the usual kind!) 744, Carmel, Ind. (thought it would be California, didn't you?) 46032, offers xerostomia sufferers Moi-Stir, and it works. Convenient little pocket atomizer.

\* \* \*

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\* \* \*

*JAMA*, May 20, carried the announcement of Albert Sabin's new aerosolized measles vaccine, which may have a huge impact on measles throughout the world.

\* \* \*

Also aerosol-applied is the new antiviral agent, ribavirin, active against influenza A and B and respiratory syncytial virus, described in an article and editorial in the May 20 *JAMA*.

\* \* \*

A child health conference emphasizing the impact of lifestyles on child and adolescent health problems will be given by the AMA in Chicago, September 10 and 11.

\* \* \*

Computed sonography is announced by Acuson (1393 Shorebird Way, Mountain View, Calif. 94043). Image resolution with Acuson 128 is said to be 2 to 4 times better than the lateral resolution with conventional systems.

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Amko, 41 Oak Ave., Bellmawr, N.J. 08031, offers the Hofmeister Endometrial Biopsy curette in 2, 3, or 4 mm size; finer teeth than the Novak curette.

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# Improved Community Colorectal Cancer Control, Kauai

Neal G. Sutherland, M.D., and Rhonda Miller, R.N., Kauai; and Thomas C. Hall, M.D., Honolulu

Over the past five years, colonoscopy has repeatedly been shown to improve detection of mass lesions within the colon.<sup>2-8</sup> During the period, January 1, 1980 to June 1, 1981, several physicians on Kauai undertook to make available easy access to flexible colonoscopy. An intensified program of stool guaiacs and increase in physician awareness to the problem of colon cancer was also started.

The purpose of this study is to compare the impact of a screening/early diagnosis program on diagnosis, treatment and survival in colorectal cancer in a rural community.

Kauai is a rural Island county of Hawaii, with approximately 35,000 residents. There are 2 local hospitals and 40 practicing physicians. Kauai's resident population has approximately the following ethnic distribution: Japanese—27%, Filipino—22%, Caucasian (including Portuguese)—18%, Part-Hawaiian—18%, Hawaiian—3%, Puerto Rican—1.4%, Chinese—0.1%, other—approximately 10%.<sup>9</sup>

## Materials and Methods

This study examined 3 groups of patients. The first included all Kauai patients diagnosed with cancer of the colon or rectum between January 1, 1973, and December 31, 1979, at G.N. Wilcox Hospital (95 acute care beds, hereafter designated as Wilcox) and Kauai Veterans Memorial Hospital (45 beds, hereafter designated as KVMH). In all, 92 patients were considered, 61 with cancer of the colon and 31 with cancer of the rectum (64 diagnosed at Wilcox and 28 at KVMH).

The second group, a subset of the first group, consisted of all colon and rectal cancer patients diagnosed August 1978 through December 1979, to provide a group of patients from recent times as an historical "control" for Group Three.

The third group was comprised of patients with the same diagnosis made between January 1, 1980, and June 1, 1981, the period of 17 months during which an intensified program of stool guaiacs and easily available colonoscopy was instituted.

From County Hospital Program of Kauai; Wilcox Memorial Hospital, Lihue, Kauai, Hawaii 96766; and Community Cancer Program of Hawaii, University of Hawaii Cancer Center, Honolulu, Hawaii 96813.

Accepted for publication August 1982.

Editor's Note: A version of this report appears in "Issues in Cancer Screening and Communications," published in 1982.

## Results

Group One patients:

Of the total of 92 patients, 52 (57%) were men and 40 (43%) women. There was a larger than expected representation of Japanese and Filipinos. This was un-

Continued on page 202

Figure 1: Group One - Sex Distribution

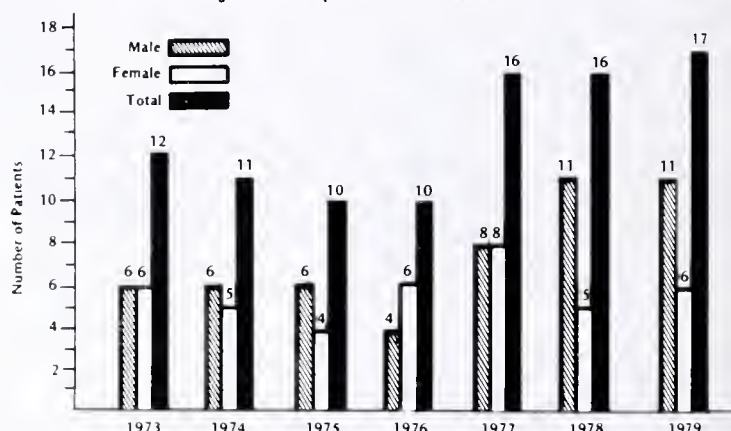


Figure 2: Group One - Ethnic Distribution

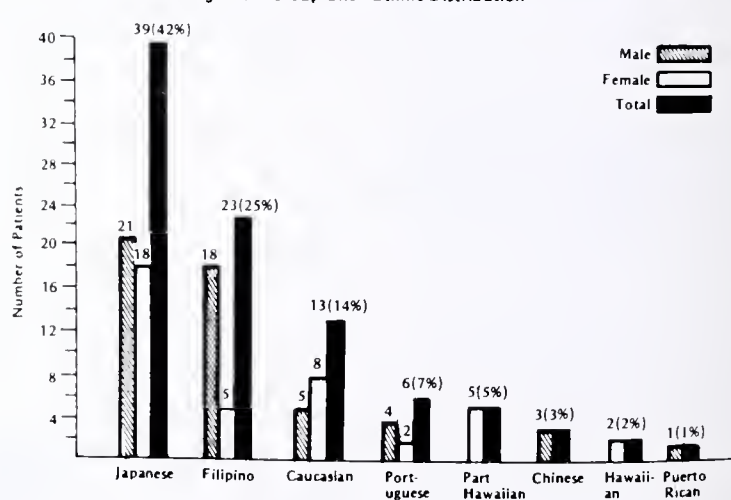
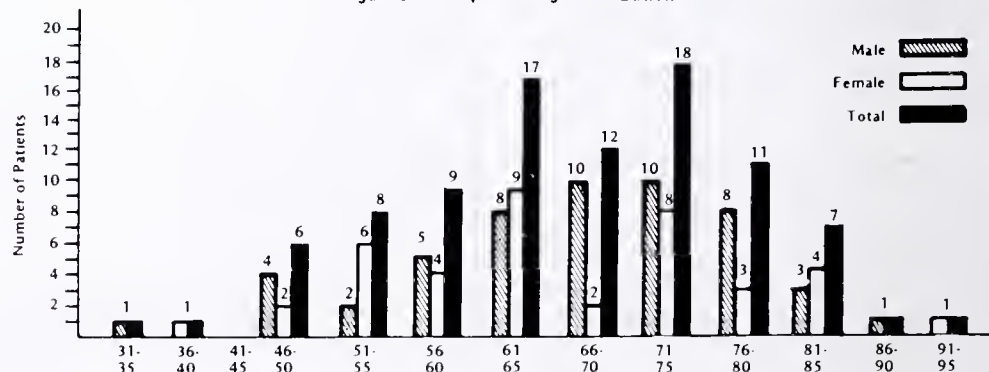


Figure 3: Group One - Age Distribution



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usual because in Hawaii these groups are reported to have a lower incidence of colon cancer than Caucasians (Figure 2). That Japanese and Filipinos are skewed toward older age frequencies on Kauai may account for this.

Age and sex distributions are shown in (Figure 3). As expected, the absolute numbers rise with age, and the relative frequency rises even more sharply because of the lower total number of residents in the older age groups. There is a slight excess of men over women.

For this study, the Dukes system of staging colorectal cancer has been used.<sup>10</sup> This distribution is comparable to that reported from most populations and is consistent with an approximately 30% survivorship (Figure 4).

Figure 4: Group One - Stage of Diagnosis

Stage	Wilcox	KVMH	Total	% of Total
Dukes A	4	1	5	5.4%
Dukes B-1	3	2	5	5.4%
Dukes B-2	17	4	21	22.8%
Dukes C-1	3	1	4	4.3%
Dukes C-2	15	10	25	27.1%
Dukes D	10	6	16	17.3%
Unstaged	2	1	3	3.2%
Unknown	9	4	13	14.1%

Figure 5: Group One - Size of Lesions  
Measured in millimeters, largest dimension

Group	One		Two		Three	
Size in mm.	1973-1979		1978-1979		1980-1981	
0-10	1	1.1%			2	9%
11-20	2	2.2%			3	13.5%
21-30	12	13.2%	5	19%	3	13.5%
31-40	18	19.8%	9	34.6%	7	31.5%
41-50	16	17.6%	3	11.5%	3	13.5%
51-60	8	8.8%	2	7.6%		
61-70	2	2.2%	1	3.8%	2	9%
71-80	4	4.4%				
81-90			1	3.8%		
91-100	5	5.5%				
100	1	1.1%				
Unknown	22	24.2%	5	19%	2	9%
TOTAL	91		26		22	

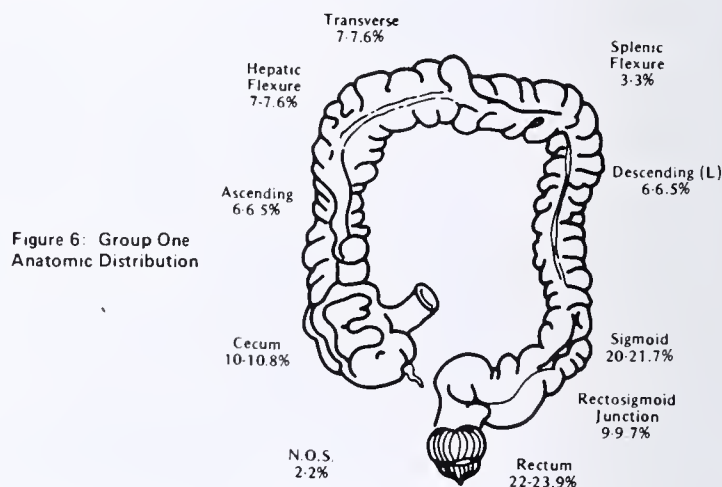


Figure 6: Group One  
Anatomic Distribution

Presenting complaints for these Group One patients were as follows:

For cancer of the colon:

1. Abdominal pain: Of the 61 patients with colon cancer, 22 (36%) presented with abdominal pain. Of these, 2 were Dukes B-2, 11 were C-2, and 7 were D; unknown, 2.
2. Melena: 9 patients (15%): Dukes A, 2 patients; B-1, 1 patient; B-2, 5 patients; C-1, 1 patient.
3. Constipation: 5 patients (8%): Dukes B-1, 1 patient; B-2, 2 patients; D, 1 patient; unknown, 1 patient.
4. Massive rectal bleeding: 3 patients (5%): 1 each, Dukes A, B-2, and C-2.
5. Occult blood positive only: 3 asymptomatic patients were found to have positive occult blood on routine exam: 1 each at Dukes A, B-2, and C-2.
6. Weakness and fatigue: 3 patients: 1 Dukes B-2 and 2 C-2.
7. Other presentations (of 2 or fewer patients each) were diarrhea, palpable abdominal mass, positive routine barium enema, and found during abdominal surgery for other reasons. Presenting complaint was undetermined for 10 patients.

Figure 7: Group One - Survivorship by Stage

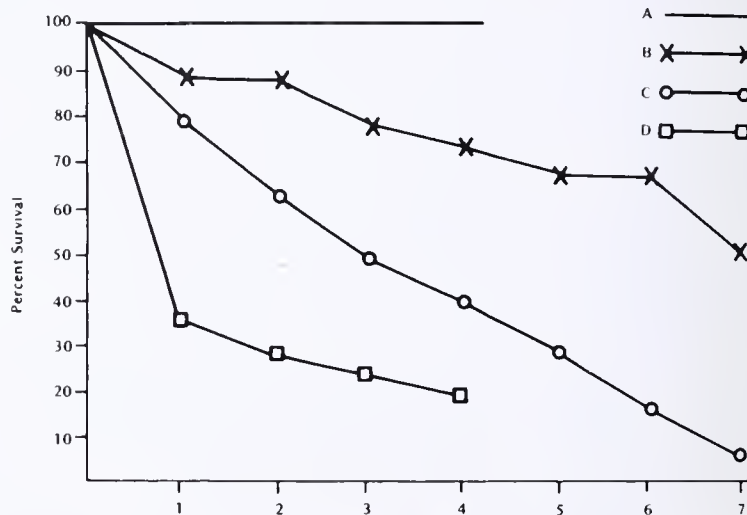
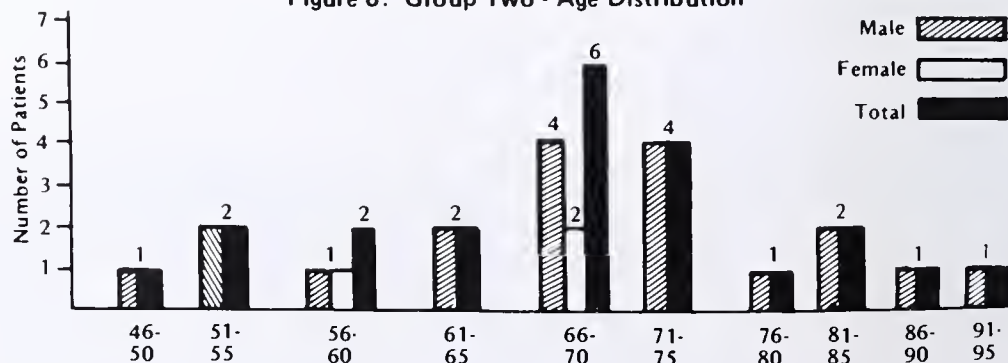


Figure 8: Group Two - Age Distribution

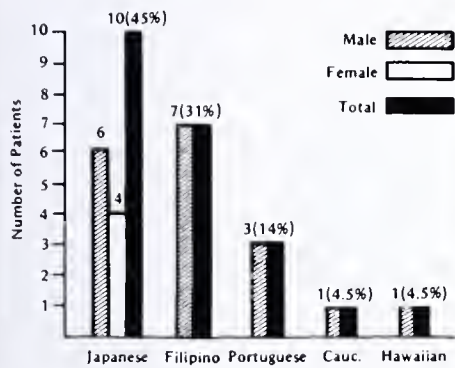


8. In 5 patients who were asymptomatic, cancers were found by routine stool guaiacs or barium enemas (5.4%).

For cancer of the rectum:

Melena was the commonest presenting complaint, found in 12 patients (38%). Other symptoms included: diarrhea, constipation, tenesmus, weakness, palpable mass, distention, and pain. There was no pattern of relationship between symptoms and staging.

Figure 9: Group Two - Ethnic Distribution



Other diagnostic features included:

Size of lesion (Figure 5): There is a skewed distribution curve with a broad shoulder, including many patients with tumors larger than 31-40 mm in greatest diameter. An effective screening program might be ex-

Figure 10: Staging - Group Two

(August 1978 - December 1979)

26 Patients - 17 males, 9 females  
(Age, race distribution essentially consistent)

A	2	(8%)
B-2	7	(27%)
C-1	1	(4%)
C-2	8	(30%)
D	5	(19%)
Unknown	2	(8%)
Unstaged	1	(4%)

pected initially to pick up more early lesions and shift the distribution to the small sizes.

Distribution within colon (Figure 6): The distribution shown here resembles closely that reported in other series. A screening program might be expected to have any of several effects upon this distribution: (1) to increase the number of small lesions discovered throughout and (2) to discover more early lesions along the left side where lesions of all sizes were most common, or (3) to discover more early asymptomatic right colon lesions.

Survival data (Figure 7) resemble closely those reported for the State of Ha-

*Continued on page 204*

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waii as a whole by the Hawaii Tumor Registry.

#### Group Two Patients:

This sample represents the last 17 months, August 1978 to December 1979, of the total period represented by Group One. Age distribution (Figure 8) is comparable both to Group One and Group Three, with a peak between 66 and 75 years. Excess incidence in men is once again seen. Also comparable to both other groups is ethnic incidence, showing again a slight excess among Japanese and Filipinos, which we attribute to the older age predominance in these ethnic groups,

Figure 11: Group Two - Anatomic Distribution

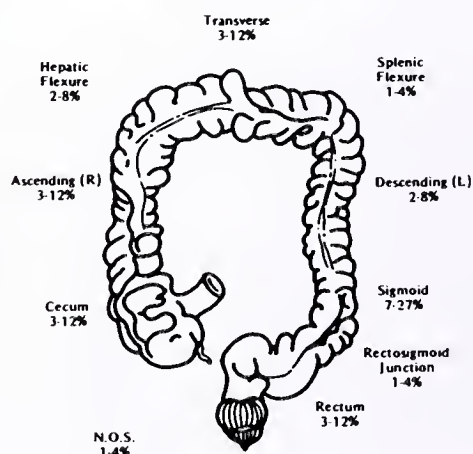
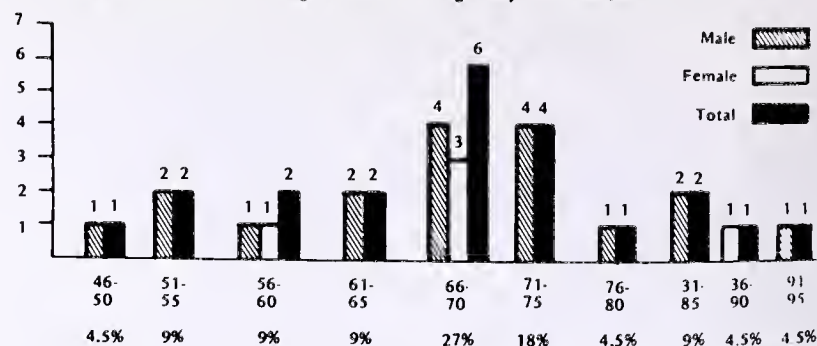


Figure 12: Group III - Age at Time of Diagnosis, Distribution in 5-Year



rather than to a true ethnic phenomenon (Figure 9).

Dukes staging in this group is shown in Figure 10. These 26 patients represent the last interval in the previous 7-year figures, and, as might be hoped, there was a movement toward better staging, in that only 12% were unstaged or unknown. However, there was no significant change in the frequency of the stages discovered. The data on size of lesions in Figure 5 shows that during this period there was a persistence of the relatively high frequency of larger lesions. Anatomically,

Figure 13: Group III - Number of Cases by Ethnicity

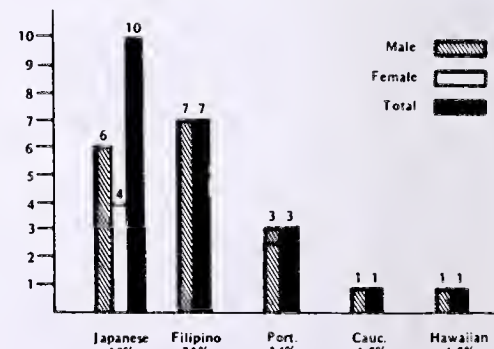
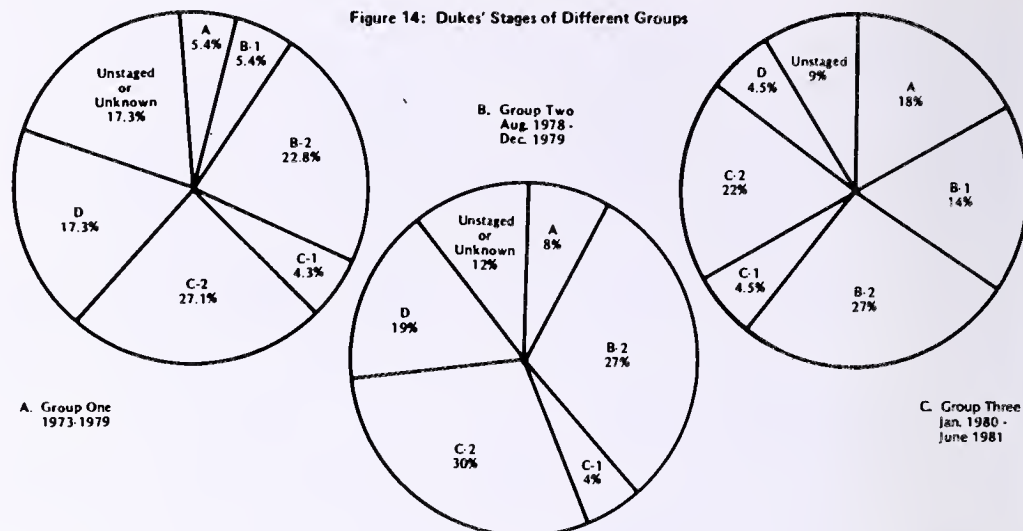


Figure 14: Dukes' Stages of Different Groups



the distribution throughout the colon was unchanged from that of the whole 7-year group (Figure 11).

#### Group Three Patients:

During this 17-month period, January 1980 to June 1981, the diagnostic approaches to colorectal cancers were inten-

sified on Kauai. A public information program by physicians and the American Cancer Society encouraged the public and physicians to include stool guaiacs and colorectal exams as part of routine check-ups. In addition, the physicians on

*Continued on page 206*

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Figure 15: Relation Between Symptoms/Signs, Stage and Size

	Dukes' Stages (mm)				
	A	B	C	D	Unknown
A. Symptomatic Group II-Range (23) - Mean (26)	30, 32* (2)**	24-58 (7)	25-95 (7)	50 (1)	40, 40 (2)
	31	40	47	50	40
	0	18-65 (8)	35-50 (3)	70 (1)	(2)
B. Asymptomatic Group II-Range (2) - Mean (26)	0	0	40, 65 (2)		
			52.5		
	6-40 (4)	22 (1)	22-50 (3)		
Group III-Range (8) - Mean (22)	21.5	22	34		

\* mm \*\* ( ) No.





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the staffs of the 2 major hospitals were encouraged to include stool guaiacs and rectal-colonic exams as part of in-patient examinations. Finally, 4 Island physicians began aggressive programs in flexible colonoscopy as follow-up for other early indicators, such as occult blood in the stool.

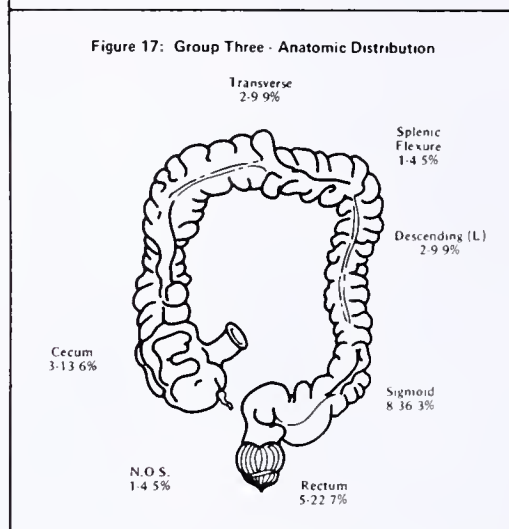
Of 22 patients, 18 (82%) were men and 4 (18%) women. Their age distribution was comparable to the other two groups (Figure 12). Ethnic distribution is as seen before (Figure 13). As to stage at diagnosis, the number diagnosed at stages A and B increased to a total of 59%, while those diagnosed at stages C and D decreased by 18% (Figure 14).

The presenting complaint is shown in Figure 15. Whereas only 5.4% of the patients during the first 7 years were asymptomatic at diagnosis, 8/22 or 36% of Group Three were asymptomatic. In 6 instances, stools were positive for occult blood, and in 2 others routine barium enemas were positive. It is of importance that half of these were in Dukes A, and all patients in Dukes A were asymptomatic. It is also clear that patients diagnosed

Figure 16: Relation Between Size and Stage

Stage	Group	Group II	Group III
Dukes A	Range	30 - 32 mm	6 - 40 mm
	Average	31 (2)	21.5 (4)
Dukes B	Range	24 - 58	18 - 65
	Average	40 (7)	34.4 (9)
Dukes C	Range	25 - 95	22 - 50
	Average	48 (9)	37 (6)
Dukes D	Range	4/5 Unrecorded	70 (1)
	Average		

( ) = Number of recoveries



by positive stool guaiacs, colonoscopy or barium enemas had a larger number of smaller and localized lesions than patients whose diagnosis resulted from complaints.

As to size of lesion, there was a shift toward smaller lesions at each stage and in the mean diameter at each stage. This would be expected if smaller lesions were being picked up earlier. The use of colonoscopy among Group Three was 73%, as contrasted with 35% in the immediately preceding 17 months, and with 13% for the entire preceding 7 years (Figure 16).

The anatomic distribution of lesions is shown in Figure 17. There is a shift to the left colon and rectum in new lesions.

Because of the recency of this study, survival rates cannot be calculated. As of July 1, 1981, 18 were alive with no evidence of recurrence, 3 were alive with cancer still present, and one was deceased with cancer present at death. However, using previous survival rates regarding stage at diagnosis, we can expect a 33% increase in 5-year survival rates due to the increased number of patients diagnosed at stages A and B.

#### Discussion

In general, the attempt to increase the detection of small lesions and at earlier Dukes stages seems to have produced results. There were many more diagnoses made in asymptomatic persons. Lesions discovered in asymptomatic patients were both smaller and at earlier Dukes stages, suggesting a response to changes in physician awareness and practice, including increased use of stool guaiacs and subsequent use of the colonoscope in work-up. If one extrapolates along past survivorship curves, there would be a net increase of 2 cures of Dukes A in the 17-month

period, plus the additional duration of survival due to change from 23% to 41% Dukes B patients. Of course, the "lead-time" factor of apparent increase, due to earlier detection without cure, must be subtracted. This correction is much smaller for the B-I lesion, which should have a 75% cure rate.

Several unusual features of the data warrant further study. Our assumption that the unusually high incidence among Japanese and Filipinos reflects the older age of these subgroups needs checking. One might have expected a greater increase in total patients diagnosed, due to adding more "silent" cases. The relatively small number of cases might not reflect this phenomenon. Also, one might have expected to find more "silent" right colon lesions.

The present report is not based upon the institution of a guaiac-colonoscopy screening program directed toward a high-risk group. It is based merely upon changes in existing office diagnostic habits. A community-based, high-risk screening program might be expected to have even greater results.

#### Summary

We studied the impact of age at diagnosis of an intensified physician-based community colorectal control program in an isolated rural community. The interventions employed involved public education, professional education, and assertive introduction of flexible colonoscopy by a group of four physicians out of a total of 40 practicing on the Island. We observed an increase in earlier Dukes stages, a decrease in later stages, smaller lesions at diagnosis, and more diagnoses in asymptomatic patients.

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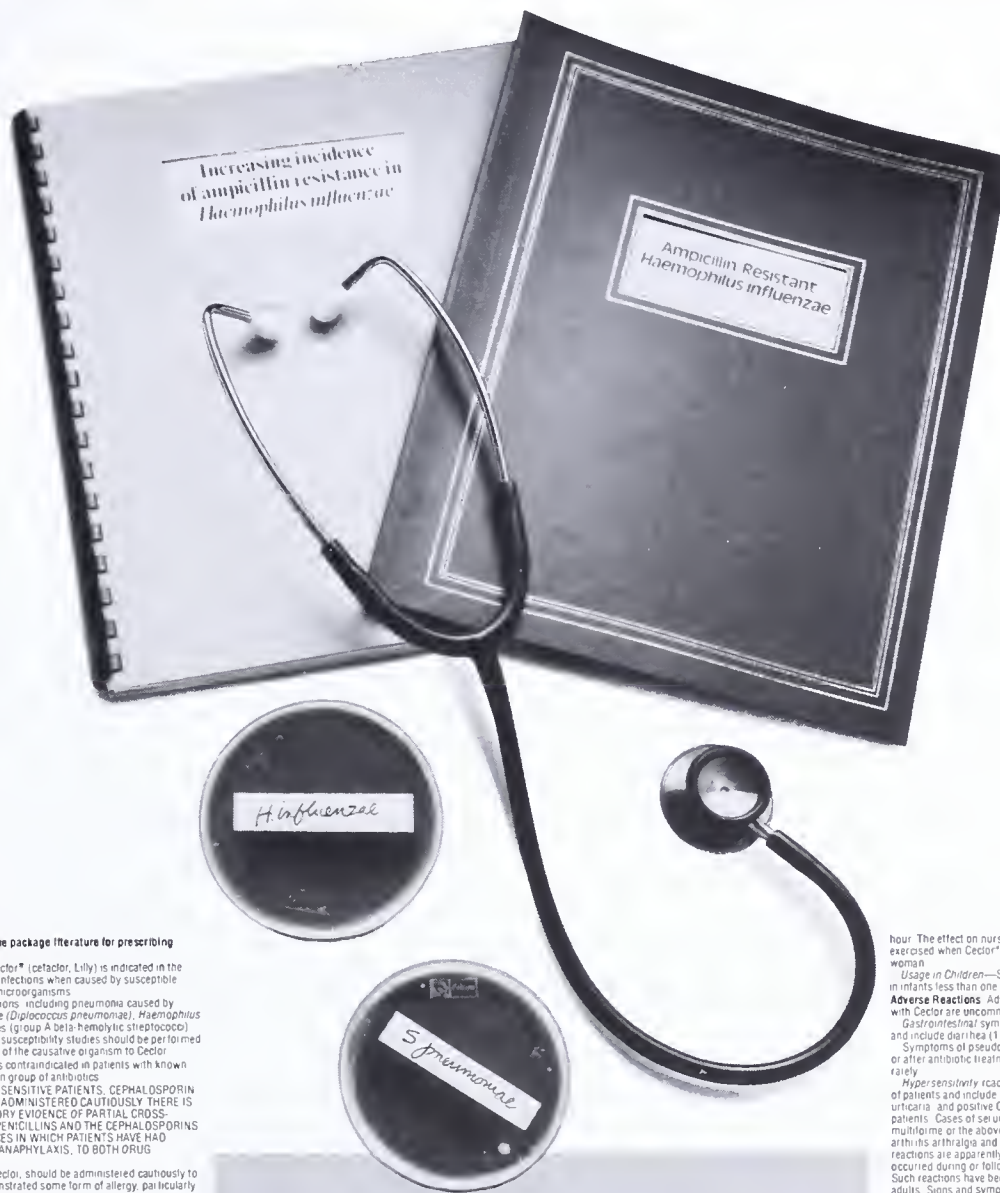
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**Indications and Usage:** Cefclor® (cefadroxil, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococci).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

**Contraindication:** Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings:** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins) therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions:** General Precautions—If an allergic reaction to Cefclor occurs, the drug should be discontinued, and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

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Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy—Pregnancy Category B:**—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

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Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hyper-sensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100), pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis, arthralgia and frequently fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor.

Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain:**—Transient abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic:**—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

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\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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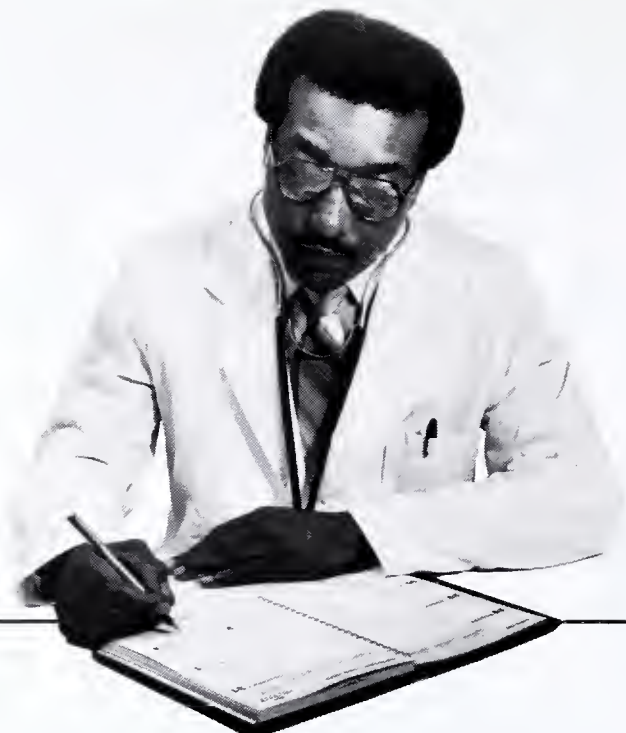
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The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

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**Warnings:** As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**ORAL:** Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

**INJECTABLE:** To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used I.V.: inject slowly; taking at least one minute for each 5 mg (1 ml) given; do not use small veins, i.e., dorsum of hand or wrist; use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea; have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least  $\frac{1}{3}$ , administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

**Precautions:** If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, i.e., phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over sedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**INJECTABLE:** Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

**Adverse Reactions:** Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depres-

sion, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

**INJECTABLE:** Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation. Laryngospasm/pain in throat or chest have been reported.

**Dosage:** Individualize for maximum beneficial effect.

**ORAL: Adults:** Anxiety disorders, relief of symptoms of anxiety—Valium tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

**Geriatric or debilitated patients:** Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

**Children:** Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

**INJECTABLE:** Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.) For dosages in infants and children see below; have resuscitative facilities available.

**I.M. use:** by deep injection into the muscle.

**I.V. use:** inject slowly, take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children administer I.V. slowly; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful. In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

**Management of Overdosage:** Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, I.V. fluids, adequate airway. Use levarterenol or metaraminol for hypotension. Dialysis is of limited value.

**How Supplied:**

**ORAL:** Valium (diazepam/Roche) scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10.

Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100; Prescription Paks of 30.

**INJECTABLE:** Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.





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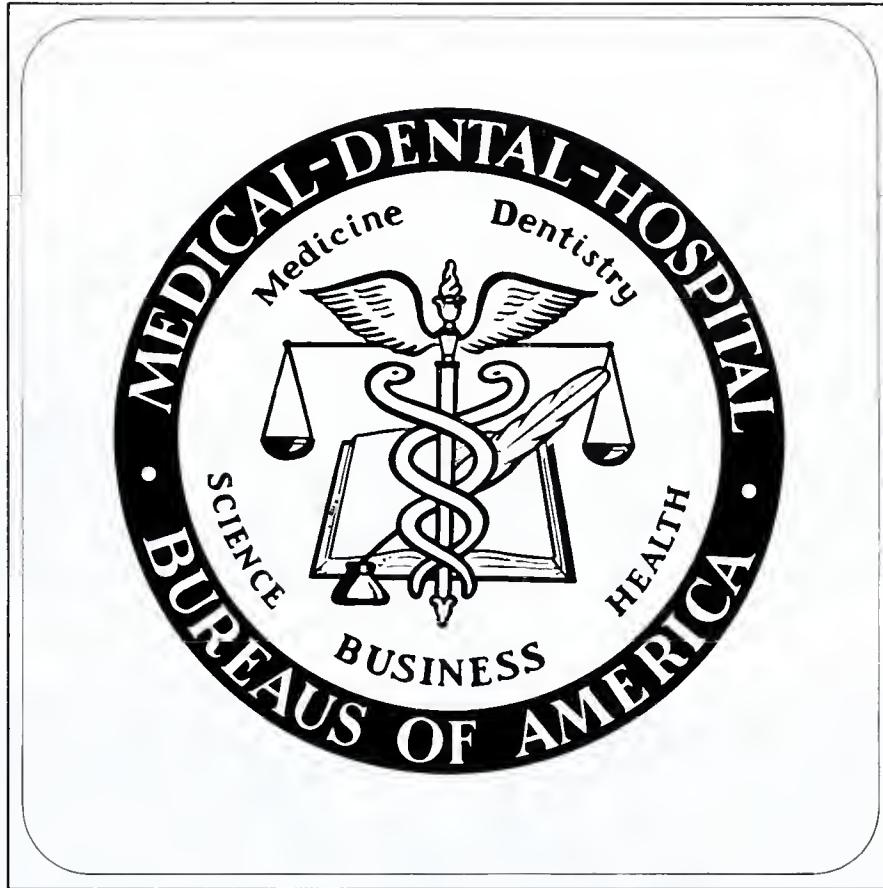
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# KEY TO SPECIALTIES

Physicians are listed by field of practice, according to designated specialty codes from the latest AMA Directory. An asterisk (\*) next to the physician's specialty code means board certified. Information in this directory is based solely on personal data furnished by the physician.

ADL	Adolescent Medicine	NPM	Neonatal-Perinatal Medicine	R	Radiology	GS	Surgery, General
AM	Aerospace Medicine	CHN	Neurology, Child	DR	Radiology, Diagnostic	HS	Surgery, Hand
A	Allergy	NA	Neuropathology	PDR	Radiology, Pediatric	HNS	Surgery, Head & Neck
AI	Allergy and Immunology	NM	Nuclear Medicine	TR	Radiology, Therapeutic	NS	Surgery, Neurological
AN	Anesthesiology	NR	Nuclear Radiology	RHU	Rheumatology	ORS	Surgery, Orthopedic
BLB	Bloodbanking	NTR	Nutrition	RHI	Rhinology	PDS	Surgery, Pediatric
BE	Branchia-Esophagology	OBS	Obstetrics	RIP	Radioisotopic Pathology	PS	Surgery, Plastic
CD	Cardiovascular Diseases	OBG	Obstetrics and Gynecology	ABS	Surgery, Abdominal	TS	Surgery, Thoracic
D	Dermatology	OM	Occupational Medicine	CDS	Surgery, Cardiovascular	TRS	Surgery, Traumatic
DMP	Dermatopathology	ON	Oncology	CRS	Surgery, Colon and Rectal	U	Surgery, Urological
DIA	Diabetes	OPH	Ophthalmology				
EM	Emergency Medicine	OT	Otology				
END	Endocrinology	OTO	Otorhinolaryngology				
FP	Family Practice	PTH	Pathology (Anatomic and Clinical)				
GE	Gastroenterology	CLP	Pathology, Clinical				
GP	General Practice	FOP	Pathology, Forensic				
GPM	General Preventive Medicine	PD	Pediatrics				
GER	Geriatrics	PDA	Pediatric Allergy				
GYN	Gynecology	PDC	Pediatric Cardiology				
HEM	Hematology	PDE	Pediatric Endocrinology				
HYP	Hypnosis	PHO	Pediatric Hematology-Oncology				
IG	Immunology	PNP	Pediatric Nephrology				
ID	Infectious Diseases	PA	Pharmacology, Clinical				
IM	Internal Medicine	PM	Physical Medicine & Rehabilitation				
LAR	Laryngology	P	Psychiatry				
LM	Legal Medicine	CHP	Psychiatry, Child				
MFS	Maxillofacial Surgery	PYA	Psychoanalysis				
ND	Neoplastic Diseases	PYM	Psychosomatic Medicine				
NEP	Nephrology	PH	Public Health				
N	Neurology	PUD	Pulmonary Diseases				

In addition to the above specialties, the following designations are also used:

- OA Other, i.e., physician designating a specialty other than those appearing above.
- US Unspecified, i.e., physician did not specify a specialty.

## KEY TO COUNTY SOCIETY MEMBERSHIP CODES

- HCMS — Hawaii County Medical Society member
- KCMS — Kauai County Medical Society member
- MCMS — Maui County Medical Society member
- OCMS — Honolulu County Medical Society member
- WHMS — West Hawaii Medical Society member
- Ret — Retired member
- Han — Honorary member

**Note:** There is no county society code for non-member physicians.

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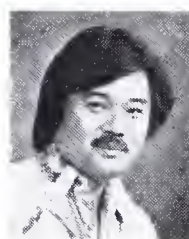
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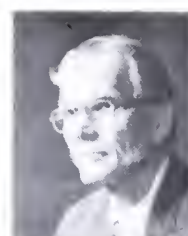




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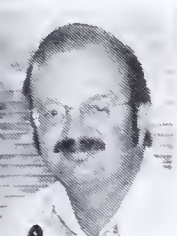
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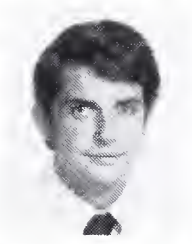
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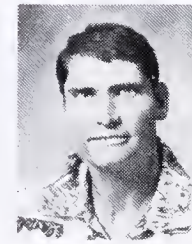
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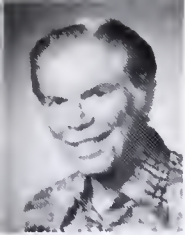
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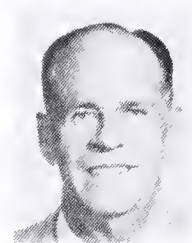
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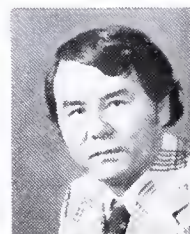
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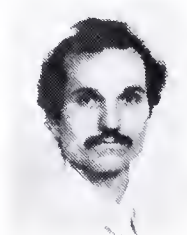
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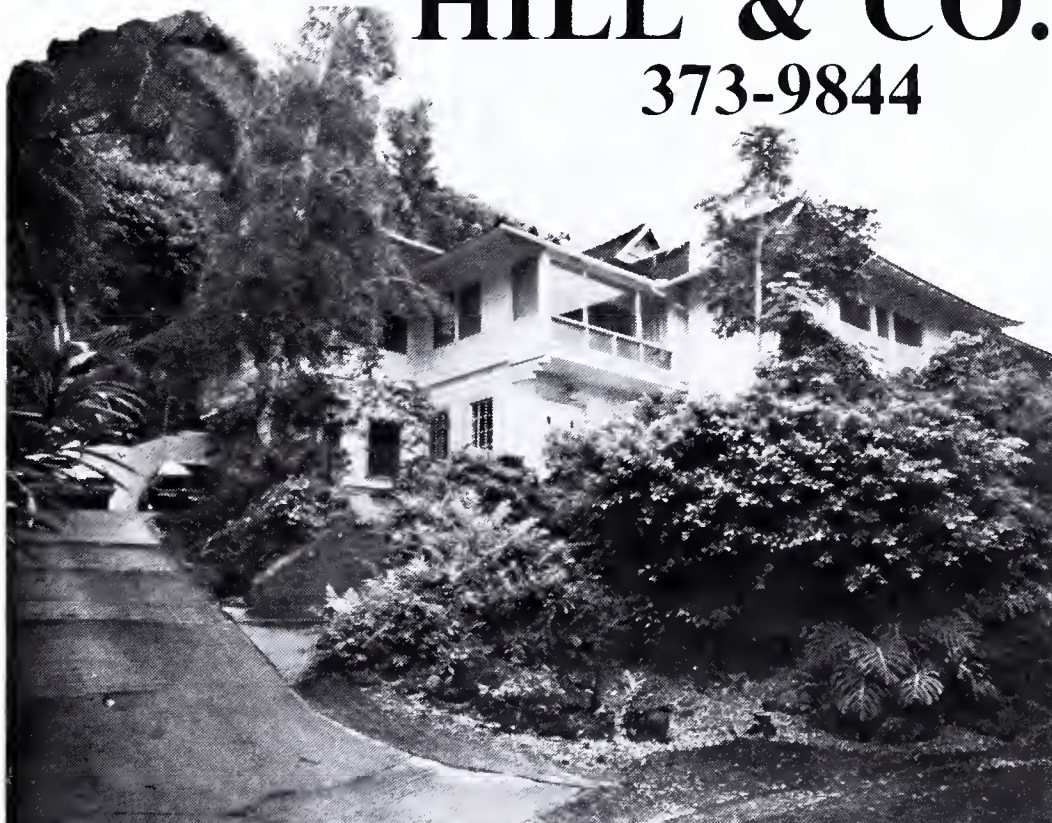
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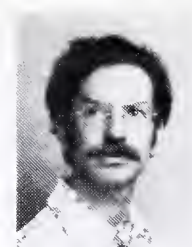




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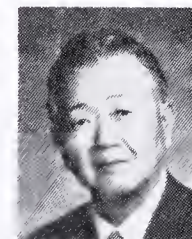
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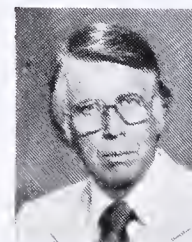
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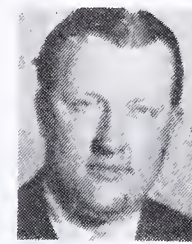
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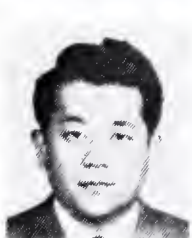
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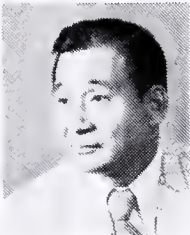
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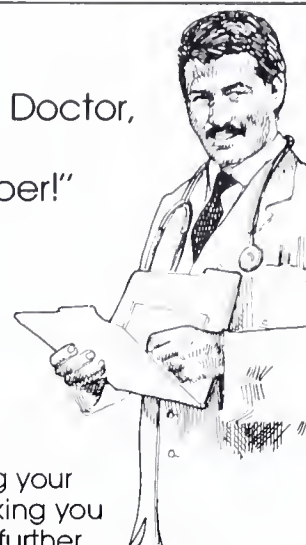


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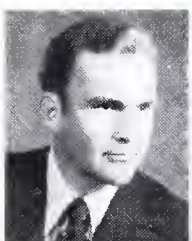
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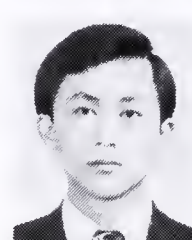
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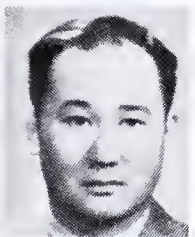
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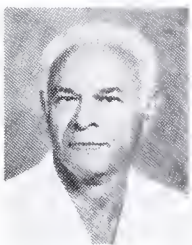
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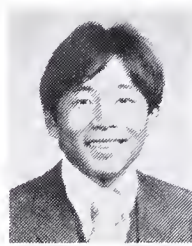
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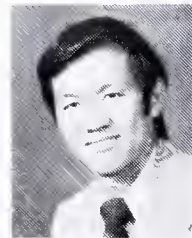
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Louisiano State U. '50  
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Houulo 96717 OCMS



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735-2161  
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Eleele 96705 KCMS



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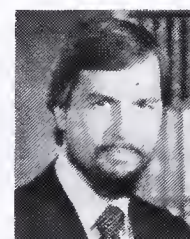
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U. of Oregon '52  
Frances 941-7191  
1212 Punohou St., A908  
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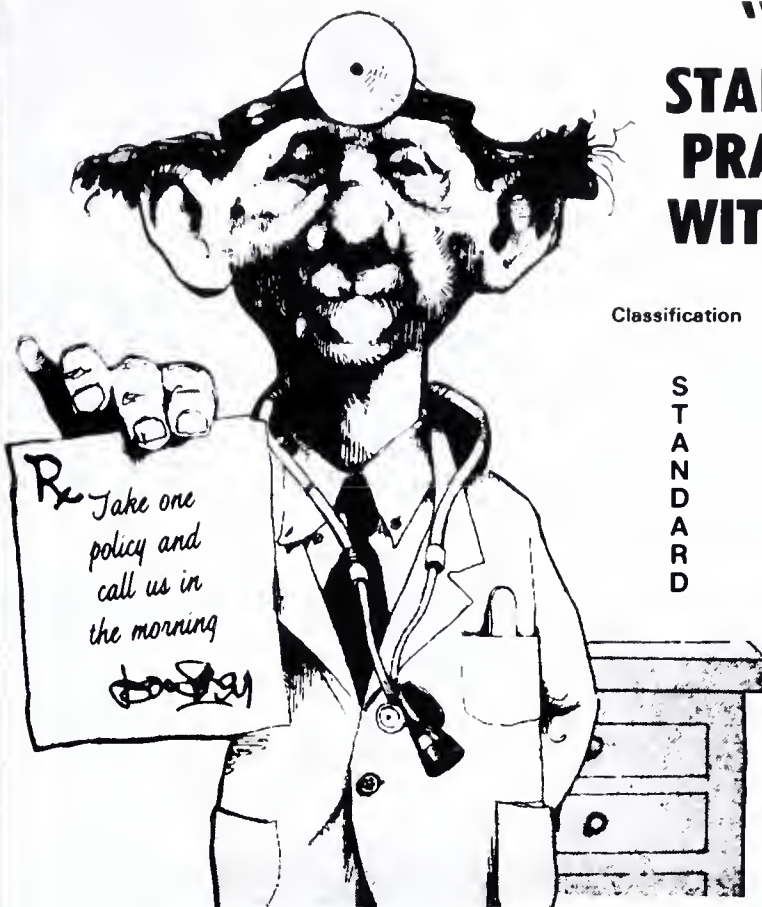
**Nakamura, Harvey T.** R\*  
34208 Kuhio Hwy.  
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Classification

Medical  
Impairment

**S  
T  
A  
N  
D  
A  
R  
D**

**Pacemaker**, (best case)

**Ulcerative Colitis and  
Regional Ileitis**,  
(uncomplicated)

**Left Bundle Branch  
Block (LBBB)**, three-year  
duration

**Psychiatric Impairments**,  
no suicidal tendencies

**Peripheral Vascular  
Disease**, (best type),  
isolated

**Select Coronary Disease**,  
(third year)

**CVA (Stroke)**, third year  
and thereafter

**Chronic Mild Obstructive  
Lung Disease**, fully  
employed, no progression  
based on APS data and  
comparative pulmonary  
function tests

**Diabetes**, onset after age  
35 with no known  
complications for any  
duration

**Epilepsy**, controlled in  
the third year or after

**Mitral Insufficiency or  
Aortic Insufficiency**,  
those with normal EKGs  
and chest X-rays

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40	111	237	439	818
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50	182	395	745	1365
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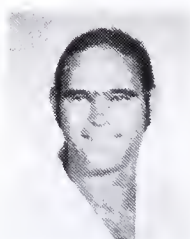
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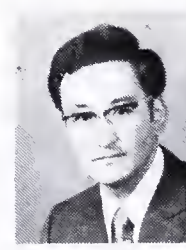
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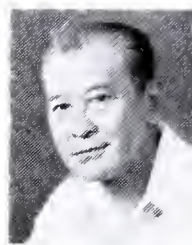
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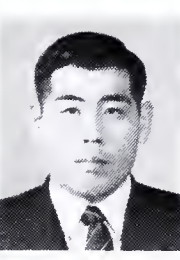
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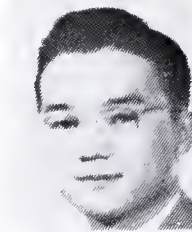
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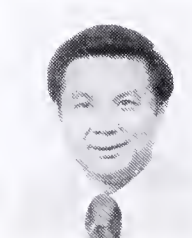
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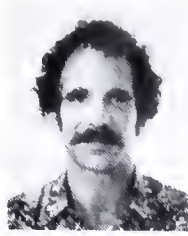


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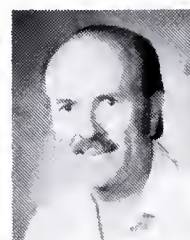
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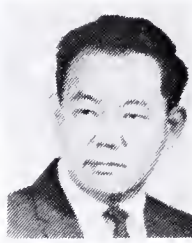
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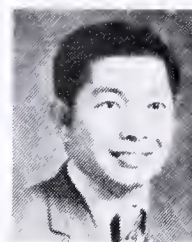
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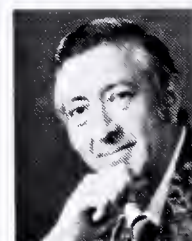
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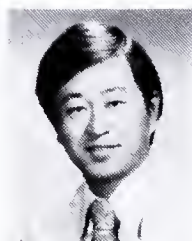
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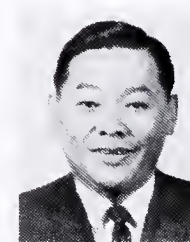
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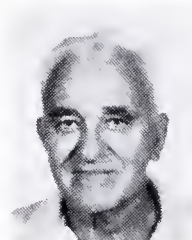
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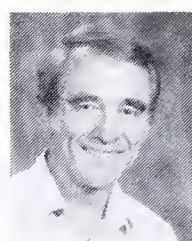
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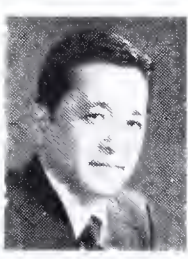











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**association** (asō'sē-ā shen, -shē-) *n.*  
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Honolulu 96815 OCMS

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6004 Haleaki St.  
Honolulu 96821 OCMS

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U. of Hawaii '84 955-4261  
1939 Kakela Dr.  
Honolulu 96822 OCMS

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U. of Hawaii '86  
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Aiea 96701 OCMS

**Shintani, Terry T.**  
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4405 Kilauea Ave.  
Honolulu 96816 OCMS

**Simonds, Robert J.**  
U. of Hawaii '86  
915 3rd Ave.  
Honolulu 96816 OCMS

**Smithing, Larry O.**  
U. of Hawaii '85  
707 Hausten St., #E  
Honolulu 96826 OCMS

**Sanada, Lorraine**  
U. of Hawaii '86 523-8529  
211C Auwailimu St.  
Honolulu 96813 OCMS

**Staats, Jennifer**  
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Honolulu 96821 OCMS

**Sugai, Wesley J.**  
U. of Hawaii '83  
2740 Kuilei Rd., #2004  
Honolulu 96826 OCMS

**Suzuka, Randall M.**  
U. of Hawaii '83  
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Honolulu 96822 OCMS

**Takata, Robin H.**  
U. of Hawaii '86 239-8535  
47-165 Iuiu St.  
Kaneohe 96744 OCMS

**Taniguchi, Paula E.**  
U. of Hawaii '84  
3350 Lulu St.  
Honolulu 96822 OCMS

**Teraaka, Jeffrey K.**  
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Honolulu 96816 OCMS

**Thompson, Jimmy M.**  
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Honolulu 96816 OCMS

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Honolulu 96813 OCMS

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<b>Vivante-Ladi, Thomas L.</b> U. of Hawaii '85 55 S. Judd St., #1906 Honolulu 96817 OCMS	<b>Williams, Vern R.</b> U. of Hawaii '84 3703 Pelu Pl. Honolulu 96816 OCMS	<b>Yang, Henry H.</b> U. of Hawaii '84 1054 Kalo Pl., #403A Honolulu 96826 OCMS	<b>Yang, Eva Y.K.</b> U. of Hawaii '83 99-710 Haia St. Aiea 96701 OCMS
<b>Wang, Allan V.T.</b> U. of Hawaii '86 2139 Chamberlain St. Honolulu 96822 OCMS	<b>Windsar, Jeanne K.</b> U. of Hawaii '86 1924 McKinley St. Honolulu 96822 OCMS	<b>Yasui, Steve T.</b> U. of Hawaii '83 25178 Pamaa Rd. Honolulu 96822 OCMS	
<b>Wang, Angela C.C.</b> U. of Hawaii '84 1503 Uluhaku Pl. Kailua 96734 OCMS	<b>Wang, Laura J.</b> U. of Hawaii '83 629 Paikau St. Honolulu 96826 OCMS		
<b>Watanabe, Brian I.</b> U. of Hawaii '85 836 University Ave., #5 Honolulu 96826 OCMS	<b>Wang, Melvin C.W.</b> U. of Hawaii '84 OCMS		
<b>Williams, Sandra S.</b> U. of Hawaii '84 3703 Pelu Pl. Honolulu 96816 OCMS	<b>Yamamoto, Laren G.</b> U. of Hawaii '83 1351 Kawelaka St. Pearl City 96782 OCMS		

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### 96720 HILO

#### 101 Hualalai Street

Casile, Ruben A. GS, OBG  
Harvey, Robert S. ORS\*  
Lee, Ung OBG\*

#### 275 Ponahawai Street

Park, Maan Saa PTH\*  
Waa, A. Stephen Jr. PTH\*

#### 670 Ponahawai Street

Bracher, George R\*  
Irvine, Robert D. ORS\*  
Lambeth, James T. R\*  
Matsuura, Ruth H. PD, A  
Miles, Alexander S.K. CD, IM\*  
Oldfather, Timothy GS\*  
Paapaa, Jahn F. PS  
Park, Haan PD\*  
Spies, William E. R\*  
Takase, Allan S. OBG\*  
Williams, James R. R\*

#### 1190 Waianuenue Avenue

Lundborg, Richard O. AN\*  
Matsubara, Rodney S. DR\*  
Townsend, Marilu EM  
Wiperman, R.P. OA

#### 1292 Waianuenue Avenue

Aikman, Robert H. OBG  
Bade, Ernest L. FP\*  
Belcher, Daniel H. IM\*  
Helms, Ed B. GP  
Kadaaka, Craig E. IM  
Lee-Ching, Richard K.M. FP\*  
Lim, Djan Indra CD  
Mantell, Edwin M. GE\*, IM\*  
Rassman, William GS\*

#### Hilo Miscellaneous

Blaamgarden, Robert E. P\*  
Carvalho, Reginald S. FP\*  
Chen, Thomas C.W. IM  
DeGinder, Kelvin FP\*, AM  
Ghash, Manas K. U\*  
Haraguchi, Samuel M. GP  
Hur, Ben I.M. FP, PD  
In, Peter A. CHP, P  
Kasamata, Sadaichi FP  
Laa, Walter S.L. GP  
Ludwig, Gerrit R. OPH\*  
Matayashi, James K. FP  
Mebane, Jahn C. P\*, OM  
Oda, Ruth E. PD\*  
Ona, Benjamin M. PUD, IM\*  
Wang, Desmond K.W. GS\*  
Waa, Timothy D. FP, OM  
Yamauchi, Richard M. GP  
Zelka, Jahn M. OPH

### 96725 HOLUALOA-KONA

Cheng, Minalu R. GS

### 96727 HONOKAA

Phillips, James S. FP  
Shrader, W.A. Jr. FP, NTR

### 96740 KAILUA-KONA

#### 75-5759 Kuakini Highway

Ferren, Frank A. Jr. GS\*  
James, Jonathan B. IM\*  
Laird, Robert H. PD\*  
Morgan, A. James P  
Young, Robert P. OPH\*

#### 75-5665 Kuakini Highway

Hadges, Clarence V. U\*  
Peebles, Lawrence A. GS\*

### Kailua-Kona Miscellaneous

Kajak, George Jr. P\*  
Kunz, Kevin GP, GPM  
Liu, Rit GS

### 96743 KAMUELA

White, Norman G. FP\*  
Willett, Edwin D. GP, OM

### 96750 KEALAKEKUA

Berk, Martin E. IM\*, CD\*  
Enlae, Gerald AN  
Gramlich, Edwin P. OBG\*, P  
Grant, Kenneth E. OBG\*  
McDevitt, Jeffery B. GP  
Pathamvanich, Damkerng GS\*  
Satta, Sukchai IM\*  
Sira, Santad OBG\*  
Spielman, Stuart H. DR\*  
Stukan, Nancy K. OBG

### 96777 PAHALA

Wigle, Arch T. FP\*, OM

## Kauai

### 96746 KAPAA

Esaki, Paul T. FP\*

### 96766 LIHUE

#### 3420 Kuhio Highway

Aiu, Patrick C. OBG\*  
Claremont, Peter R\*  
Cauch, Rex D. PTH\*  
Crane, Timothy B. OPH\*  
Diaz, Arnulfo B. IM  
Elpern, David J. D\*  
Emrick, Robert J. PTH\*  
Funaki, Clarence R\*  
Grallman, Thomas ORS\*  
Hamblin, Robert J. GS\*  
Kim, Peter IM\*  
Magaun, Thatcher GS\*  
Nakamura, Harvey T. R\*  
Maare, David F. GP  
Netzer, H. Rager OTO\*  
Remitia, Rienzi G. AN\*  
Renti Cruz, William A. OBG  
Scamaharn, James O. FP\*, EM  
Sutherland, Neal IM\*, ON  
Yaneda, Glenn T. IM\*

#### Lihue Miscellaneous

Chuang, Katak An PD\*, PDC  
Newman, Jahn W. FP\*  
Plawman, Gary L. OTO

### 96796 WAIMEA

Miyashira, Yanemichi FP  
Overlack, Robert FP\*  
Valencia, Jose S.L. R\*  
Wade, Burt O. GP, GS

### 96763 Lanai

Hennessy, Joseph P. Jr. FP, EM

## Maui

### 96713 HANA

Hawell, Milton M. GP

### 96732 KAHULUI

#### 39 Kam Avenue

Haskinsan, William S. OBG\*  
Stadd, Russell T. OPH\*

#### 33 Lono Avenue

Bentley, Wendell J. PS  
Schlesinger, Stephen L. PS

#### 53 Puunene Avenue

Aquilizan, Hilaria A. GS, FP  
Dan, Andrew OTO\*  
James, William C. IM\*

Kepler, William G. PD\*  
Probst, C.E. Jr. ORS\*  
Wienke, James W. GS\*  
Withers, Jahn N. GS\*

### Kahului Miscellaneous

Fleming, James F. FP\*  
Haines, J. Glenn U\*  
Haling, Kenneth A. FP  
Moran, Clifford PTH\*  
Sakai, Leonard H. GS, CRS  
Underwood, Edward B. GP

### 96753 KIHAI

Miewald, Jahn R. OBG\*  
Roberts, Donald B. PD\*, PDC

### 96761 LAHAINA

#### 130 Prison Street

Gilbert, Darcel FP\*  
Harrison, Robert J. AI\*, FP\*  
Iacanetti, William E. GS  
Percy, Helen S. FP\*

#### 910 Wainee Street

Extan, Eileen FP\*  
Peat, Alexander C. PD\*  
Welch, Kathleen FP

### Lahaina Miscellaneous

Azman, Ben K. FP\*

### 96768 MAKAWAO

Hanley, Jahn F. AN  
Reid, William A. AN

### 96790 KULA

Andrews, Joseph E. GP, PUD  
Lewin, Jahn C. FP

### 96793 WAILUKU

#### 30 N. Church Street

Park, Gregory IM, ON  
Zakaib, George S. ORS\*, HS\*

#### 221 Mahalani Street

Bendan, James A. DR\*  
DeWinter, Robert J. PTH\*  
Nichals, Michael C. AN\*  
Wassan, Eugene C. III DR\*, NM  
Yalles, Milton PTH

#### 1063 E. Main Street

Aggerup, Glenn S. OBG  
Baum, James E. GP  
Kelman, Edward M. CLP\*, PTH\*

#### 2180 Main Street

Akitake, Bert PD  
Arendsdarf, Alfred M. P\*, CHP\*  
Bjarnsan, Robert G.B. R\*  
Briley, Jahn M. Jr. PD\*  
Burnett, William H. IM  
Diamond, Peter E. ORS\*  
Erbach, Thomas J. OTO\*  
Fu, Denis J. PD\*  
Gintling, William OBG\*  
Hanlan, Marian L. ADL, PD\*  
Marr, James D. GS\*  
Mathews, Marvin G. P\*, CHP\*  
Mathias, Deborah L. GP  
Mitchell, William H. Jr. PUD\*, IM\*  
Ohata, Seiya GP  
Rhodes, Clifford OPH\*  
Rackett, Louis S. GS\*  
Salenger, Gary D\*  
Savona, Michael R. IM\*  
Scawcraft, Charles GE, IM  
West, Richard M. ORS\*  
Yapp, Robert G. Jr. OBG\*

### 99 S. Market Street

Achong, Neville G. GS\*  
Clow, Roger P. IM\*  
Dioso, Marconi M. IM\*, ON  
McCleary, Donna L. PD  
Romero, Jose L. GS\*

### 1827 Wells Street

Moser, Steven M. IM\*, NEP\*  
Strother, Billie F. AN\*  
Uehara, Sakae GS\*

### Wailuku Miscellaneous

Carlson, George L. AN\*, OA  
Clark, Sidney B. GPM\*, PH  
Froix, Cleo J. GS\*, ABS  
Hew, Joseph T.T. Jr. IM, GE  
McCallum, Kenneth B. AN\*  
Mills, John F. EM  
Mirzai, Mahmood GS\*  
Mitchell, Charles T. EM  
Putnam, Deborah A. EM\*

### 96748 Molokai

Kach, James A. FP\*  
Stevens, Paul G. GP

## Oahu

### 96701 AIEA

#### 99-128 Aiea Heights Drive

Akagi, Nabaru GS, FP  
Davis, Geoffrey V. OPH\*  
DeSilva, Nihal OBG  
Dimitrian, Michael J. IM  
Ebisu, Ray J. IM\*  
Fujita, Wayne H. D\*  
Grebe, Werner H. GS\*  
Lucila, Danilo V. P\*  
Hirasa, James H. IM\*  
Luke, Bruce I. OBG  
Magnier, Eugene A.H. CD\*, IM\*  
Nakashima, Roland K. GS, PS  
Naruta, Stephen M. ORS  
Ogawa, Robert T. PD\*  
Shimamura, George OBG\*  
Sugimata, Fumiya FP, IM  
Suzuki, Mitsuaki PD\*, PNP  
Tanabe, Eugene T. U\*  
Wang, William K. D\*  
Yana, Stephen S. PD

#### 98-1010 Haukapila Road

Fraese, Carol A. GP  
Grimm, Terrence E. PTH\*  
Martin, Curtice T. D\*  
Strutin, David M. IM\*  
Sugimata, Fumiyo FP, IM

#### 99-870 Iwaena Street

Salcedo, Arturo F. PTH\*  
Tamura, Paul Y. PTH\*

#### 98-1247 Kaahumanu Street

Berthiaume, Jahn T. IM\*  
DeLeon, Jose IM  
Hina, Ronald H. PD  
Lau, Shigeko Okamata PD\*, PHO\*  
Wood, David E. PD\*, ADL\*  
Yakochi, Gareth C. OBG\*

#### 98-211 Pali Momi Street

Cahill, Thomas G. FP\*  
Lin, Paul Y.K. FP  
Patterson, R. Reginald GP, ORS

### Aiea Miscellaneous

Balosan, Lydia K. FP

### 96712 HALEIWA

Miller, Rodman B. FP\*  
Miyasaki, Seiichi FP\*

<b>96717 HAUULA</b> Schlachter, Marc B. GP	<b>96744 KANEHOE</b> <b>45-1144 Kamehameha Highway</b> Allin, Robert C. OBG* Kumar, Krishna P* Tsai, Joseph C.S. IM*	Meyers, Arlene D. PD* Nakagawa, Bunzo OBG* Tesoro, Richard P. FP* Whang, Daniel GP Wilkinson, William H. FP, OBG	Callan, John P. IM*, PUD* Catalano, Michael A. RHU* Chun, Kenneal Y.C. OTO* Dang, Michael H. TS*, CDS*, GS* Druecker, Clifford T. FP Goh, Kim S. D* Gota, Unoji IM*, CD Halford, Peter GS* Jahson, Elmer C. IM*, ON Kuba, Katsuji PS* Morris, Alfred D. IM*, CD* Murphy, Alvin E. Jr. P* Owens, Thomas C. ORS* Peraff, Ronald P. OTO* Rajdev, Niranjan ON*, HEM*, IM* Reddy, Venu D. PD*, PDC Smith, John S. ORS* Smith, Robert L. ORS* Stewart, James H. U* Tucker, Jerame L. OPH* Walsh, Patrick J. FP* Wilkinson, Robert W. PD*, PHO* Wilson, Wayne R. OPH*
<b>96734 KAILUA</b> <b>30 Aulike Street</b> Ceccarelli, Frank E. U* Chun, L.T. PD* Lipp, Edward B. Jr. ORS*, HS* Mertz, James L. PD* Nemechek, Robert W. ORS* Simmons, Robert L. ORS* Varady, Lothar M. P*	<b>45-602 Kamehameha Highway</b> Dizon, Victor S. FP Livingstone, David FP* Puapangsakorn, Praphan IM*	<b>34 Makani Avenue</b> Wee, Timothy I. FP Whang, Edmund S.M. IM*, NEP	
<b>40 Aulike Street</b> Aoki, John E. FP* Chang, Winfred Y.K. IM* Winston, Hamilton M. OBG	<b>45-939 Kamehameha Highway</b> Luning, Alan K. FP Sasaki, Kaoru FP Tanaka, Kazushi GS* Tong, Wyman E. PD* Yim, Henry L. PD*	<b>Wahiawa Miscellaneous</b> Corbay, Jahn M. OPH*, AM McKenzie, William F. OBG* Soriana, Gildo S. IM*, NEP Tun, Than AN	
<b>228A Kuulei Road</b> Davies, Harri L. FP* Lum, Steven M.C. IM*, END	<b>45-955 Kamehameha Highway</b> Cho, Jonathan K. IM* Randell, David J. OPH*	<b>96792 WAIANAE</b> Banner, Richard O. GP Cunanan, Angel C. FP*, IM Dodge, Frederick A. FP* Macapinlac, Aurora IM, ON	
<b>407 Ulunui Street</b> Crim, Eleanor C. OBG* deHay, Raymond M. IM*, GE Huntley, David M. D* Johns, Montgomery N. OBG	<b>46-005 Kawa Street</b> Caughlin, Susan M. GP Kiehm, Leonard Y.H. GS* McDannell, John T. AI*, PD* Simich, Robert L. EM, FP*	<b>96797 WAIPAHU</b> <b>94-235 Leoku Street</b> Lau, C.P. PM*, FP* Lau, Lawrence L. Jr. GP Young, Herbert H.C. Jr. PD*	
<b>419 Ulunui Street</b> Brault, Roger B. GS* Lezak, Myron B. GE*, IM*	<b>Kaneohe Miscellaneous</b> Reppun, J.I. Frederick GP, FP	<b>Waipahu Miscellaneous</b> Ignacio, Azucena IM, ON Maffei, Rudolph J. GS Noda, Richard Y. GP	<b>839 South Beretania Street</b> Canete, Danelo R. IM, CD Fukina, Chiyome L. IM Houk, Jahn H. IM* Sage, William H. IM Sroat, Donald A. OPH* Stevens, Marquis E. IM Takemoto, Wayne S. OBG* Warshauer, Frederick B. GS*, TS
<b>Kailua Miscellaneous</b> Aglinskas, Audrius S. EM Akina, Eleanore Green CHP, P* Dierdorff, Edwin P. OTO* Hammer, Suzanne M. P Hellreich, Philip D. D* Kuo, Philip AI*, PD* Lawson, Harold G. FP*, GS Matsui, Adelina V. IM, END Orinion, Ernesta A. IM Scherman, Bernard M. EM Yamashiro, Charles K. OBG*	<b>96782 PEARL CITY</b> <b>803 Kamehameha Highway</b> Angeles, Abdiel M. IM Mateus, Francy M. P	<b>96801 HONOLULU</b> Sims, Joel K. EM, GP Wang, Robert T. OPH*	<b>848 South Beretania Street</b> Edwards, Gary A. OPH* Kimura, David Y. ORS* Luke, Herbert K.N. GS*, OM Wallach, Stephen J. CD, IM* Wong, Rose K.L. IM Yee, Ann Barbara Ha PD*
	<b>Pearl City Miscellaneous</b> Kagihara, Edward K. Jr. PD* Mitsunaga, Richard Y. PD*	<b>96813</b> <b>50 South Beretania Street</b> Chee, Percival H.Y. OPH* Lichter, Rowlin L. ORS*	
	<b>96786 WAHIAWA</b> <b>302 California Avenue</b> Abundo, Manuel A. Jr. GS* Baysa, Norberto FP* Cecilio, Salvador B. ORS* Kenessey, George E. U*	<b>550 South Beretania Street</b> Bergmanis, Juris NS* Buchanan, William Y. Jr. DR*	

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 Beddow, Ralph M. END, DIA  
 Bennett, Truett V. OTO\*

Bernstein, Mark H. P\*  
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 Camara, Jarge G. OPH\*  
 Carty, Fugate OBG\*  
 Cashman, Thomas M. PD\*  
 Chang, Gonzalo G. NS  
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 Dunn, Philip H. EM  
 Evans, David G. EM  
 Ewing, George M. A\*, PD\*  
 Fergusson, David J.G. CD  
 Ferris, Eugene B. III CDS\*, GS\*  
 Fitz-Patrick, David END, IM\*  
 Flair, Robert C. PTH\*  
 Freed, Avery M. R\*  
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 Grekin, Jay L. D\*  
 Grote, Joseph A. EM\*  
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 Hamman, William M. NS\*  
 Hartman, William A. GE\*, IM\*  
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 Hefley, Martha Lou EM  
 Hindle, William H. DBG\*  
 Ho, Edgar C.K. PD\*, PDC  
 Ho, Reginald C.S. IM\*, HEM  
 Ho, Victor PD\*  
 Itagaki, Raymond K. CD\*, IM\*  
 Jabe, Virgil R. Jr. DR\*  
 Jones, Donald A. DRS\*  
 Janes, William P.G. PUD\*, IM\*  
 Kaku, T. Ray OTO  
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 Kubota, Earl A. EM  
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 Nardyke, Robert A. NM\*, IM\*  
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 Pearce, James W. N\*

Penaff, James H. PS\*  
 Pien, Francis D. ID\*, IM\*  
 Partner, Bernard M. PM\*  
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 Prestan, Henry N. IM\*  
 Pruett, Kenneth DBG\*  
 Rayner, Enid Lynn IM\*  
 Rigler, Robert G. R\*  
 Schulz, Robert W. PS\*  
 Scully, Nial M. GS\*, TS\*  
 Spangler, John S. DBG\*  
 Stoddard, Randall R. AN\*  
 Strode, Walter S. U\*  
 Sue, Sam D. GE\*, IM\*  
 Thune, Robert AI\*, IM\*  
 White, Roger L. CD\*, IM\*  
 Wong, Sidney B.W. R\*  
 Yarbrough, William J. U\*

**181 S. Kukui Street**  
 Benson, Robert G. FP\*  
 Chen, Ming DPH\*  
 Dang, William W.L. GS  
 Lam, Frederick M.K. Jr. FP\*

**1236 Lauhala Street**  
 Batkin, Stanley NS\*, N  
 Hall, Thomas C. IM\*, ON\*  
 Kalanel, Laurence N. GPM\*

**1356 Lusitana Street**  
 Char, Walter F. P\*, CHP\*, PYA\*  
 McDermatt, John F. Jr. P\*, CHP\*  
 Schatz, Irwin J. IM\*, CD\*

**1380 Lusitana Street**  
 Arnold, Harry L. Jr. D\*  
 Aung, Than AN  
 Barnett, Arthur S. AN  
 Berman, Steven J. ID\*, IM\*  
 Caver, Claude V. D  
 Chen, Chao H. DBG\*  
 Chesne, Edward L. CD\*, IM\*  
 Chinn, Kenneth AN  
 Chow, Peter AN  
 Clingan, Robert C. D\*  
 Cagan, John J. CD\*, IM\*  
 Caudit, Paul T. ON  
 Caaper, Maxwell A. PS\*, GS\*  
 Dang, Collin R. TS\*, GS\*  
 DeJournett, Richard L. DR\*  
 Dericks, Gerard H. ORS\*  
 Doa, Gene W. OTO\*  
 Doyle, James R. ORS\*  
 Edwards, Nancy L. D\*  
 Emura, Steven T. OBG  
 Faulkner, Gerald D. DPH\*  
 Fang, Bernard W.D. IM\*, CD  
 Furukawa, Edward F. P\*  
 Glover, Gary A. IM, GE  
 Gordon, Lawrence H. DRS\*  
 Gulbrandsen, Christian L. IM\*, HEM\*  
 Hathaway, Joseph C. D\*  
 Hiatt, Gerald A. GE\*, IM\*  
 Hinman, Robert C. N\*, IM  
 Ho, Richard K.B. PD\*  
 Hanba, Clayton K. DBG\*  
 Izumi, Allan K. D\*, DMP\*  
 Jacang, Amelia R. PD\*  
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 Liao, Shun-Kwung GS\*  
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 Kirkham, Lindsay Jack PH, IM

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 Ikezaki, Francis M. IM  
 Iritani, Roy I. GS\*  
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Lai, Patrick T.	IM	<b>3538 Waiālae Avenue</b>		Davis, William G.	U*	Cachero, Catalino L.	FP
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<b>615 Piikai Street</b>		<b>96817</b>		<b>1744 Liliha Street</b>		<b>96819</b>	
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Wakatake, Yorio	OBG	Matsuoka, Maughn	AN	Torres, Ignacio A.	GS*, TS*	<b>96822</b>	
Yamamoto, Shigeo	U	Miyahira, Willard Y.	DIA, END	Wang, Elsie Blossom	IM*	<b>1960 East-West Road</b>	
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<b>96815</b>		Morioka, William K.	GS*	Yim, Ernie M.S.	PUD, IM*	Lum, Bert K.B.	US
<b>1697 Ala Moana</b>		Nakamura, Jeffrey M.	HEM*, ON*	Young, Edwin L.	OTO, OPH	Smith, Roy G.	PD*, PH
Choan, Andre B.	PD*	Nakata, Herbert M.	PD*	<b>2230 Liliha Street</b>		Stitt, Pauline G.	PD*, GPM*
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Ing, Gordon K.C.	OBG*	Sakuda, David H.	R*	Lumeng, James	PTH*, IM*, ON*	Jasinski, Doris	FP*
Lim, Sigdian S.	OTO*, A	Sato, Norman E.	OBG*	Moore, Richard D.	R*	<b>96822 Miscellaneous</b>	
McCallin, Paul F.	OBG*	Shibuya, Neil Y.	IM	Ostman, Douglas C.	EM	Arthur, Philip S.	R*
Mehta, Bal Raj	IM*, PUD*	Shimoda, Stanley S.	GE*, IM*	Park, Young K.	PTH*	Lee, Richard K.C.	PH*, D
Roth, Alexander	PD*, PDA, A*	Shirasu, Myron E.	IM*			Ning, Lily	FP*
Straehley, Clifford J. Jr.	TS*	Sunahara, Paul I.	D*	<b>2244D Liliha Street</b>		Schnack, George F.	P*
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Allison, Samuel D.	D*	Uechi, Michael D.S.	U*	Chock, King Chee	GP	<b>96825 Miscellaneous</b>	
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<b>96816</b>				Uyeno, R.K.	GP	Chock, Raymond Y.W.	N
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Skinsnes, Olaf K.	PTH*	Fukunaga, Francis H.	PTH*	Yee, Cyrus W.	OPH	Wong, Herbert Y.K.	IM
Waite, Verne C.	GS*, GE	Massey, Douglas G.	PUD*	Yee, Lester P.K.	GS*		



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Ogata, Roger I. IM\*, RHU  
Takushi, George M. DR  
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Wang, Calvin Y.H. CD\*, IM\*

## CARDIOVASCULAR SURGERY

Ferris, Eugene B. III CDS\*, GS\*  
McNamara, J. Judson CDS\*, TS\*, GS\*  
Morena, Richard J. CDS\*, TS\*

## CHILD NEUROLOGY

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Okumura, Sada CHN

## CHILD PSYCHIATRY

Akina, Eleanore Green CHP, P\*  
Balman, William M. CHP\*, P\*  
In, Peter A. CHP, P

## CLINICAL PATHOLOGY

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## COLON AND RECTAL SURGERY

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Sakai, Clarence S. CRS\*

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Clingan, Robert C. D\*  
Cuphey, Edwin R. D\*  
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Edwards, Nancy L. D\*  
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Glamb, Roman W. D\*  
Gah, Kim S. D\*  
Galdstein, Norman D\*  
Grekin, Jay L. D\*  
Hathaway, Joseph C. D\*  
Hellreich, Philip D. D\*  
Huntley, David M. D\*  
Izumi, Allan K. D\*, DMP\*  
Kim, Robert D\*, DMP\*  
Maag, Frederick F. D\*, DMP\*  
Martin, Curtice T. D\*  
Palmer, Daniel D. D\*, DMP\*  
Salenger, Gary D\*  
Steuermann, Nicholas D  
Sunahara, Paul I. D\*  
Wong, William K. D\*

## DIABETES

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## DIAGNOSTIC RADIOLOGY

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DeJournett, Richard L. DR\*

Jobe, Virgil R. Jr. DR\*  
Lau, Lansdale D.C. DR\*  
Liese, Graver J. DR\*  
Matsubara, Rodney S. DR\*  
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Takushi, George M. DR  
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## EMERGENCY MEDICINE

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Dunn, Philip H. EM  
Evans, David G. EM  
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Hefley, Martha Lou EM  
Kubata, Earl A. EM  
Mills, John F. EM  
Mitchell, Charles T. EM  
Nakashima, Norman T. EM  
Ostman, Douglas C. EM  
Putnam, Deborah A. EM  
Scherman, Bernard M. EM  
Simich, Robert L. EM, FP\*  
Sims, Joel K. EM, GP  
Townsend, Marilu EM

## ENDOCRINOLOGY

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## FAMILY PRACTICE

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Bade, Ernest L. FP\*  
Ballard, Edwin R. FP  
Baysa, Norberta FP\*  
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Bolason, Lydia K. FP  
Cachero, Catalino L. FP  
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Chang, Thomas Y.K. FP  
Chun, Richard K. FP  
Cockett, Patrick M. FP\*  
Cunanan, Angel C. FP\*, IM  
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Exton, Eileen FP\*  
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Wilkinson, William H. FP, OBG  
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Woo, Timothy D. FP, OM

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Pang, Glen M.L. GE, IM  
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Shimoda, Stanley S. GE\*, IM\*  
Sue, Sam O. GE\*, IM\*

## GENERAL PRACTICE

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Barahal, James GP  
Baum, James E. GP  
Beardsley, Gale R. Jr. GP  
Chack, King Chee GP



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Froese, Carol A.	GP	Lau, Edward K.	GS*	Clow, Roger P.	IM*	Ogawa, Shozo	IM, DIA
Fujii, Takeo	GP	Liao, Shun-Kwung	GS*	Dee, Peter	IM, P	Oishi, Noboru	IM*, ON*, HEM
Halpern, Gilbert M.	GP, OM	Liu, Rit	GS	deHay, Raymond M.	IM*, GE	Drinion, Ernesto A.	IM
Haraguchi, Samuel M.	GP	Loui, Wallace	GS*, TS*	DeLeon, Cornelia	IM	Pack, Winifred P.	IM*, PUD
Helms, Ed B.	GP	Luke, Herbert K.N	GS*, DM	Denzer, Stephen	IM	Park, Gregory	IM, ONC
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Lau, Lawrence L. Jr.	GP	Mirikitani, Clifford K.	GS*, TS*	Ebisu, Roy J.	IM*	Ramiscal, Marina Badua	IM
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Mathias, Deborah L.	GP	Nip, George H.	GS*	Fong, Henry H.C.	IM*	Sakai, F. Joan	IM, CD
McDevitt, Jeffrey B.	GP	Nishi, James A.	GS	Fryer, Gladys C.	IM, GER	Satta, Sukchai	IM*
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Phillips, James S.	GP	Rassman, William	GS*	Hall, Thomas C.	IM*, DN*	Soriano, Gildo S.	IM*, NEP
Reppun, J.I. Frederick	GP, FP	Rockett, Louis S.	GS*	Hew, Joseph T.T. Jr.	IM, GE	Stevens, Marquis E.	IM
Shlachter, Marc B.	GP	Romero, Jose L.	GS*	Hicks, Russell	IM*, ADL	Strutin, David M.	IM*
Stevens, Paul G.	GP	Sakai, Leonard H.	GS, CRS	Higashi, Lillian S.	IM	Sugihara, Jared G.	IM*, NEP*
Trager, Milton	GP, PM	Scully, Nial M.	GS*, TS*	Hirasa, James H.	IM*	Sugiyama, Glen H.	IM
Underwood, Edward B.	GP	Shim, Walton K.T.	GS*, PDS*	Ho, Reginald C.S.	IM*, HEM	Sutherland, Neal	IM*, ONC
Uyeno, R.K.	GP	Tanaka, Kazushi	GS*	Hollison, Robert V. Jr.	IM*, FP*	Suzuki, George	IM
Wade, Burt O.	GP, GS	Tanoue, Roy	GS*	Houk, John H.	IM*	Tsai, Joseph C.S.	IM*
Walsh, William M.	GP, FP	Tashima, Wilfred I.	GS*	Hughes, Kenneth R.	IM*, LM	Ushiyama, Yoshiki	IM
Whang, Daniel	GP	Tom, Benjamin C.K.	GS*	Humphry, Joseph W.	IM*	Uto, Glenn A.	IM*
Willett, Edwin D.	GP, OM	Torres, Ignacio A.	GS*, TS*	Ignacio, Azucena	IM, ON	Wachi, Dennis H.	IM*, ON*
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Wong, Carolina D.	GP	Waite, Verne C.	GS*, GE	Ikezaki, Francis M.	IM	Wang, Elsie Blossom	IM*
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		Wienke, James W.	GS*	James, Jonathan B.	IM*	Won, Francis K.L.	IM
		Withers, John N.	GS*	James, William C.	IM*	Wong, Herbert Y.K.	IM
		Wong, Bradley D.	GS*	Johnson, Elmer C.	IM*, ON	Wong, Roger H.W.	IM
		Wong, Desmond K.W.	GS*	Kadooka, Craig E.	IM	Wong, Rose K.L.	IM
		Wong, Livingston M.F.	GS*	Kagihara, Lance M.	IM	Wong, Warren L.H.	IM
		Yamauchi, Shoyei	GS	Kamada, Roy O.	IM*, CD*	Yamada, Edward Y.	IM
		Yee, Lester P.K.	GS*	Kanda, Edward N.	IM*, GE*	Yim, Bernard J.B.	IM*, CD
		Yoshida, Yutaka K.	GS*	Kaneshiro, Melvyn M.	IM*, HEM*	Yoneda, Glenn T.	IM*
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				Kim, Dukee	IM*		
				Kim, John H.C.	IM*, END		
				Kim, Peter	IM*		
				Kuge, Mark T.	IM*		
				Kuramoto, Kikuo	IM		
				Lai, Patrick T.	IM		
				Lau, Richard C.	IM		
				Lau, Thomas K.L.	IM, DN		
				Lee, Ronald O.	IM		
				Lee, Winfred Y.	IM*, NM*, END*		
				Liu, Gordon F.H.	IM		
				Loh, Kevin	IM*, ON*, HEM		
				Lum, Chew Mung	IM*		
				Lum, Steve M.C.	IM*, END		
				Lum, Wayne Y.H.	IM		
				Macapinlac, Aurora C.	IM, ONC		
				Madamba, Gloria M.	IM		
				Matsui, Adelina V.	IM, END		
				Matsuyama, Eugene S.	IM*		
				Mehta, Bal Raj	IM*, PUD*		
				Mickey, John V.	IM*		
				Mills, George H.	IM		
				Min, Thomas S.	IM*		
				Minami, Howard S.	IM*, GE		
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				Moore, Ronald D.	IM*		
				Morris, Alfred D.	IM*, CD*		
				Moser, Steven M.	IM*, NEP*		
				Myers, N. Fred	IM*		
				Nakasone, Nobuyuki	IM		
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#### GENERAL PREVENTIVE MEDICINE

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Iwasa, Florence K.	GPM, PH
Kolonel, Laurence N.	GPM*
Nomura, Abraham M.	GPM
Quisenberry, Walter B.	GPM*, IM

#### GENERAL SURGERY

Abundo, Manuel A. Jr.	GS*
Achong, Neville G.	GS*
Akagi, Noboru	GS, FP
Ang, Manuel	GS*, PD*
Aquilizan, Hilario A.	GS, FP
Au, Francis T.C.	GS
Balfour, John F.	GS*
Batten, Grover H.	GS*
Berry, Robert	GS
Boone, Edward W.	GS*
Brault, Roger	GS*
Bristol, Rodrigo G.	GS
Casile, Ruben A.	GS, GYN
Chang, Clifford B.G.	GS*
Chang, Walter Y.M.	GS*
Cheng, Minolu R.	GS
Dang, William W.L.	GS
Ferren, Frank A. Jr.	GS*
Froix, Cleo J.	GS*, ABS
Fujikami, Raymond H.	GS*, CRS
Fukumura, Takakazu	GS, GE
Grebe, Werner H.	GS*
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Hamblin, Robert J.	GS*
Iaconetti, William E.	GS
Inouye, Allan A.	GS*, TS*
Iritani, Roy I.	GS*
Jim, Edward L.S.	GS*, HNS*
Judd, Charles S.	GS*
Kiehm, Leonard Y.H.	GS*

#### HEMATOLOGY

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#### INFECTIOUS DISEASES

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#### INTERNAL MEDICINE

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Aoki, Vincent S.	IM*, PA
Arnold, Stephen D.	IM*
Au, Thomas	IM
Belcher, Daniel H.	IM*
Bell, Douglas B. II	IM
Berk, Morton E.	IM*, CD*
Berthiaume, John T.	IM*
Blaisdell, Richard	IM*, HEM
Brault, Anna Maria	IM
Bruce, Nadine C.	IM*
Burnett, William H.	IM
Callan, John P.	IM*, PUD*
Canete, Danelo R.	IM, CD
Chang, Richard K.C.	IM*, GE*
Chang, Walter W.Y.	IM*, A*
Chang, Winfred Y.K.	IM*
Chen, Thomas C.W.	IM
Ching, Charles T.H.	IM*
Chinn, Florence J.	IM
Cho, Jonathan K.	IM*

#### NEPHROLOGY

Ng, Roland C.K.	NEP*, IM*
Seto, Dudley S.L.	NEP*, IM*
Wong, Eugene G.C.	NEP, IM*

#### NEUROLOGICAL SURGERY

Batkin, Stanley	NS*, N
Bergmanis, Juris	NS*
Chong, Gonzalo G.	NS
Cloward, Ralph B.	NS*
Goebert, H. William Jr.	NS, LM
Hammon, William M.	NS*
Ishida, Warren Y.	NS
Kam, Calvin C.M.	NS*
Nicholson, Maurice W.	NS
Sakoda, Thomas H.	NS
Taniguchi, Raymond M.	NS*
Urata, Maxwell M.	NS

#### NEUROLOGY

Au, Stanford K.W.	N*
Chock, Raymond Y.W.	N
Hinman, Robert C.	N*, IM
Hirst, Neill S.	N*
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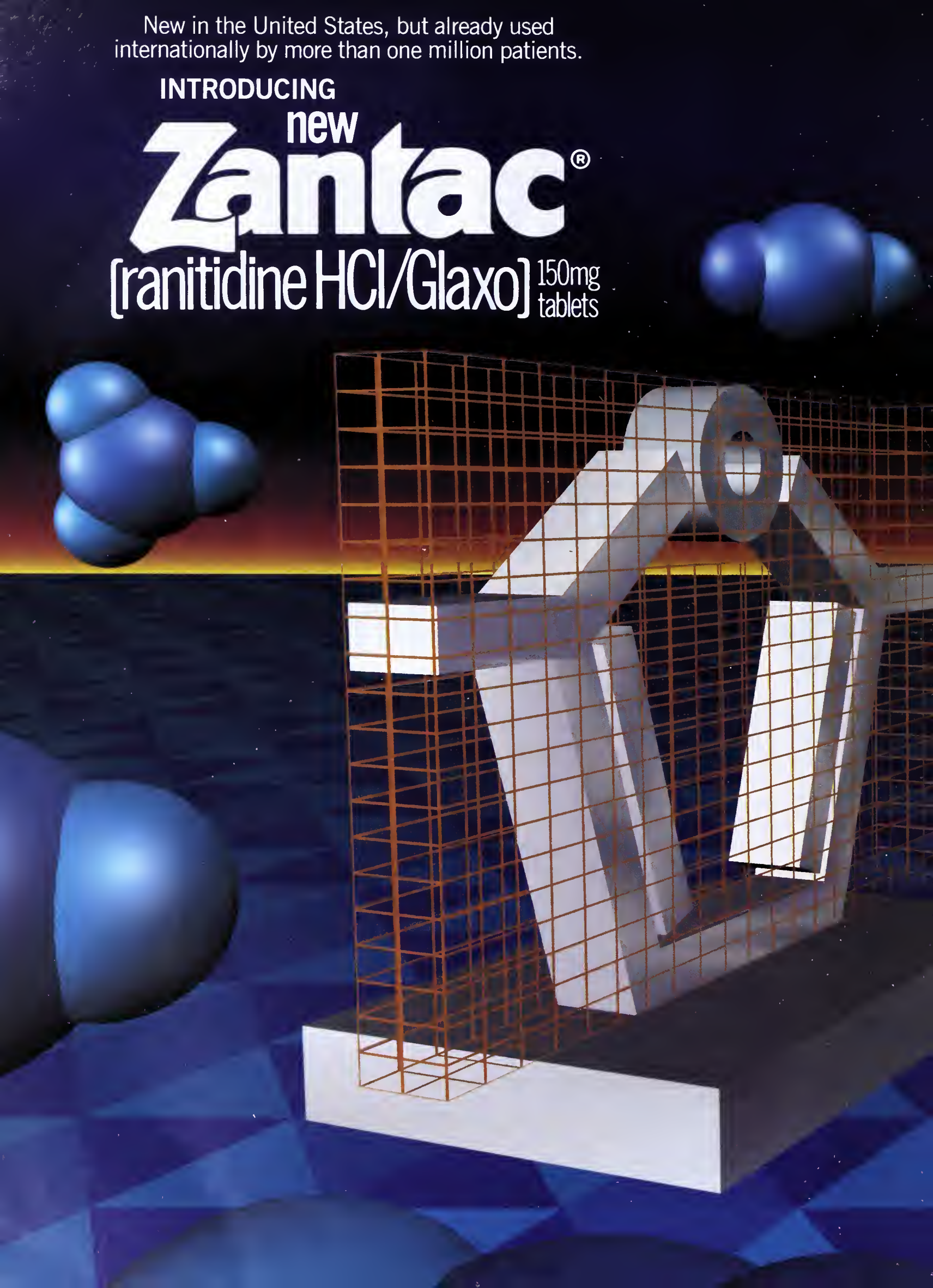
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INTRODUCING

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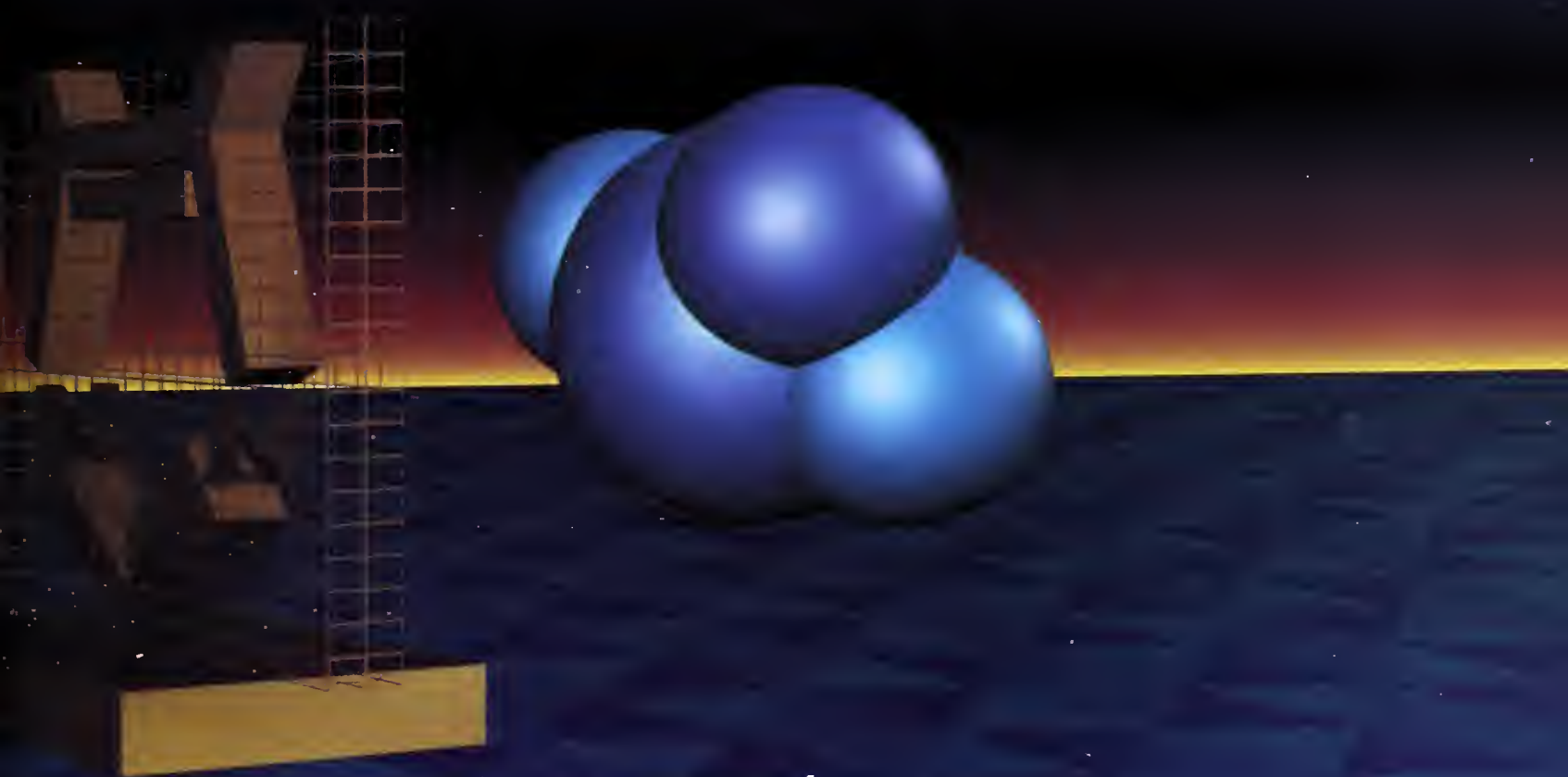
**Zantac**®

[ranitidine HCl/Glaxo] 150mg tablets





# Unsurpassed activity in gastric acid inhibition: for active duodenal ulcer and pathological hypersecretory conditions



## Zantac is a new chemical compound

- Not a histamine-related imidazole—a furan compound.

## Zantac offers important patient benefits

- Single-dose action for up to 12 hours—b.i.d. administration. Four weeks of therapy for most patients with active duodenal ulcer.
- No interaction with warfarin, theophylline and diazepam.
- Effective and well tolerated even in pathological hypersecretory conditions.
- For adverse reactions see complete prescribing information.

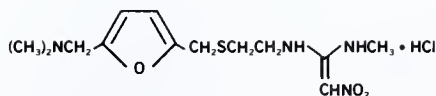


# Unsurpassed activity in gastric acid inhibition

# Zantac®

(ranitidine HCl/Glaxo) 150mg tablets

**DESCRIPTION:** The active ingredient in ZANTAC® Tablets, ranitidine hydrochloride, is a histamine H<sub>2</sub> receptor antagonist. Chemically it is N[2-[[[5-[(dimethylamino) methyl]-2-furanyl]methyl]thio]ethyl]-N'-methyl-2-nitro-1, 1-ethenediamine, hydrochloride. It has the following structure:



The empirical formula is C<sub>13</sub>H<sub>22</sub>N<sub>4</sub>O<sub>3</sub>S.HCl, representing a molecular weight of 350.87.

Ranitidine hydrochloride is a white to pale yellow granular substance which is soluble in water. It has a slightly bitter taste and sulphur-like odor.

Each tablet for oral administration contains 168 mg of ranitidine hydrochloride, equivalent to 150 mg ranitidine.

**CLINICAL PHARMACOLOGY:** ZANTAC® (ranitidine hydrochloride) is a competitive, reversible inhibitor of the action of histamine at the histamine H<sub>2</sub> receptors, including receptors on the gastric cells.

ZANTAC does not lower serum Ca<sup>++</sup> in hypercalcemic states.

ZANTAC is not an anticholinergic agent.

## Antisecretory Activity:

### 1. Effects on acid secretion:

ZANTAC inhibits both daytime and nocturnal basal gastric acid secretion as well as gastric acid secretion stimulated by food, histamine and pentagastrin, as shown in the table below.

Effect of Oral ZANTAC on Gastric Acid Secretion

	Time After Dose, hrs.	% Inhibition of Gastric Acid Output by Dose, mg
		75-80 100 150 200
Basal	Up to 4	99 95
Nocturnal	Up to 13	95 96 92
Betazole	Up to 3	97 99
Pentagastrin	Up to 5	58 72 72 80
Meal	Up to 3	73 79 95

It appears that basal, nocturnal and betazole stimulated secretion are most sensitive to inhibition by ZANTAC, responding almost completely to doses of 100 mg or less, while pentagastrin and food stimulated secretion are more difficult to suppress.

### 2. Effects on other gastrointestinal secretions:

**Pepsin:** Oral ZANTAC 150 mg did not affect pepsin secretion. Total pepsin output was reduced in proportion to the decrease in volume of gastric juice.

**Intrinsic factor:** Oral ZANTAC 150 mg had no significant effect on pentagastrin-stimulated intrinsic factor secretion.

**Serum gastrin:** ZANTAC (ranitidine hydrochloride) has little or no effect on fasting or postprandial serum gastrin.

### 3. Other pharmacological actions:

- Hepatic blood flow reduced 20%. Significance unknown.
- Gastric bacterial flora—increased in nitrate-reducing organisms, significance not known.
- Prolactin—no effect (IV bolus) or less increase than cimetidine.
- Other pituitary hormones—no effect on serum gonadotropins, TSH, GH. Possible impairment of vasopressin release.
- No change in cortisol or aldosterone.
- No effect on count, motility or morphology of sperm, androgen level, estradiol, testosterone.
- No effect on penile erection, sexual arousal or ejaculation.

### 4. Pharmacokinetics:

ZANTAC is 50% absorbed after oral administration compared to an IV injection with mean peak levels of 440-545 ng/ml occurring at 2-3 hours after a 150 mg dose. The elimination half-life is 2.5-3 hours.

Absorption of ZANTAC is not significantly impaired by concomitant administration of food or antacids. Propantheline slightly delays and increases peak blood levels of ZANTAC, probably by delaying gastric emptying and transit time.

Serum concentrations necessary to inhibit 50% of stimulated gastric acid secretion are estimated to be 36-94 ng/ml. Following a single oral dose of 150 mg, serum concentrations of ZANTAC (ranitidine hydrochloride) are in this range up to 12 hours. However, blood levels bear no consistent relationship to dose or degree of acid inhibition.

The principal route of excretion is the urine, with approximately 30% of the orally administered dose collected in the urine as unchanged drug in 24 hours. Renal clearance is

about 410 ml/min, indicating active tubular excretion.

In man, the N-oxide is the principal metabolite in the urine; however this amounts to less than 4% of the dose. Other metabolites are the S-oxide (1%) and the desmethyl ranitidine (1%). The remainder of the administered dose is found in the stool.

The volume of distribution is about 1.4 L/kg. Serum protein binding averages 15%.

## Clinical Trials:

### Duodenal Ulcer

In a multicenter, double-blind controlled U.S. study of endoscopically diagnosed duodenal ulcers, earlier healing was seen in the ZANTAC-treated patients as shown below:

	ZANTAC + Number Entered	Healed/ Evaluable	Placebo + Number Entered	Healed/ Evaluable
Outpatients				
Week 2	149	54/147 (37%)*	146	29/137 (21%)
Week 4		109/148 (74%)*		68/137 (50%)

\*p = 0.0014

\*\*p = 0.0001

+ All patients were permitted prn antacids for relief of pain.

In these studies, ZANTAC-treated patients reported a reduction in both daytime and nocturnal pain, and they also consumed less antacid than the placebo-treated patients.

	Median number of daily doses of antacid	
	Ulcer Healed	Ulcer Not Healed
ZANTAC	0.06	0.71
Placebo	0.71	1.43

During the clinical trials, some not healed at 4 weeks were re-randomized to either placebo or ranitidine, with the results after 4 weeks shown below:

Not healed on:	Retreated with:	Healed:
Placebo	Placebo	10/21
Placebo	Ranitidine	15/24
Ranitidine	Ranitidine	5/8
Ranitidine	Placebo	8/19

It can be seen that there are trends weakly favoring ranitidine but none of the differences are statistically significant.

Studies have been limited to short-term treatment of acute duodenal ulcer. Patients whose ulcers healed during therapy had recurrences of ulcers at the usual rates. There have been no systematic studies to evaluate whether continued treatment with ZANTAC alters recurrence rates.

### Pathological Hypersecretory Conditions

(such as Zollinger-Ellison Syndrome)

ZANTAC inhibits gastric acid secretion and reduces occurrence of diarrhea, anorexia, and pain in patients with pathological hypersecretion associated with Zollinger-Ellison Syndrome, systemic mastocytosis and other pathological hypersecretory conditions (e.g. post-operative, "short gut" syndrome, idiopathic). Use of ZANTAC was followed by healing of ulcers in 8 of 19 (42%) patients who were intractable to previous therapy.

## INDICATIONS AND USAGE:

ZANTAC® (ranitidine hydrochloride) is indicated in:

1. Short-term treatment of active duodenal ulcer. Most patients heal within 4 weeks and the usefulness of further treatment has not been demonstrated. Studies available to date have not assessed the safety of ranitidine in uncomplicated duodenal ulcer for periods of more than 8 weeks.

2. The treatment of pathological hypersecretory conditions (e.g., Zollinger-Ellison Syndrome and systemic mastocytosis).

In active duodenal ulcer and hypersecretory states, concomitant antacids should be given as needed for relief of pain.

**CONTRAINDICATIONS:** There are no known contraindications to the use of ZANTAC® (ranitidine hydrochloride).

## PRECAUTIONS:

### General

1. Symptomatic response to ZANTAC® therapy does not preclude the presence of gastric malignancy.

2. Since ZANTAC is excreted primarily by the kidney, dosage should be adjusted in patients with impaired renal function (see Dosage and Administration). Caution should be observed in patients with hepatic dysfunction; ZANTAC is metabolized in the liver and, at present, the effects of hepatic disease on the metabolism of ZANTAC is unknown.

### Laboratory Tests

False positive tests for urine protein with Multistix® may occur during ZANTAC therapy and therefore testing with sulphosalicylic acid is recommended.

### Drug Interaction

Potential of warfarin-type anticoagulants has not been observed with concomitant ZANTAC administration. Likewise no clinically significant drug interactions have been observed between ZANTAC and theophylline or ZANTAC and diazepam. Drug interactions of this type are not expected since ranitidine does not significantly interact with the cytochrome P450 linked drug metabolizing enzyme system.

### Carcinogenesis, mutagenesis, impairment of fertility

There was no indication of tumorigenic or carcinogenic effects in lifespan studies in mice and rats at doses up to 2000 mg/kg/day.

Ranitidine was not mutagenic in standard bacterial tests (*Salmonella*, *E. Coli*) for mutagenicity at concentrations up to the maximum recommended for these assays.

In a dominant lethal assay a single oral dose of 1000 mg/kg to male rats was without effect on the outcome of 2 matings per week for the next 9 weeks.

### Use in Pregnancy

Pregnancy Category B. Reproduction studies have been performed in rats and rabbits at doses up to 160 times the human dose and have revealed no evidence of impaired fertility or harm to the fetus due to ZANTAC (ranitidine hydrochloride).

There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

## Nursing Mothers

ZANTAC is secreted in human milk. Caution should be exercised when ZANTAC is administered to a nursing mother.

## Pediatric Use

Safety and effectiveness in children have not been established.

## Use in Elderly Patients

Ulcer healing rates in elderly patients (65-82 years) were no different from those in younger age groups. The incidence rates for adverse events and laboratory abnormalities were also not different from those seen in other age groups.

## ADVERSE REACTIONS

Headache has been found to be more frequent in ZANTAC®-treated patients (3%) than placebo-treated patients (2%). The following symptoms have been reported in ZANTAC-treated patients with a frequency of 1% or less: malaise, dizziness, constipation, nausea, abdominal pain and rash.

Decreases in white blood cell and platelet count have occurred in a few patients. These did not lead to cessation of treatment and were clinically insignificant. There have been no reported cases of agranulocytosis or aplastic anemia. Some small increases in serum creatinine have been noted in patients receiving ZANTAC (ranitidine hydrochloride).

Some increases (up to 5 times the upper limit of normal in one case) in serum transaminases and gamma-glutamyl transpeptidase have been reported. Rare cases of hepatitis have been reported.

In normal volunteers, SGPT values were increased to at least twice the pre-treatment levels in 6 of 12 subjects receiving 100 mg q.i.d. IV for 7 days, and in 4 of 24 subjects receiving 50 mg q.i.d. IV for 5 days. This dose-related effect of the IV formulation suggests that ZANTAC is potentially hepatotoxic. In placebo controlled studies of the oral formulation involving 2437 patients (1358 receiving ranitidine and 1079 patients receiving placebo), with most patients treated 4-8 weeks, there was no difference in incidence of SGOT-SGPT elevations between the 2 groups.

No clinically significant interference with endocrine or gonadal function have been reported.

**OVERDOSAGE:** There is no experience to date with deliberate overdosage. The usual measures to remove unabsorbed material from the gastrointestinal tract, clinical monitoring and supportive therapy should be employed.

Studies in animals receiving doses of ZANTAC® in excess of 225 mg/kg/d have shown muscular tremors, vomiting, and rapid respiration. Single oral doses of 1000 mg/kg in mice and rats were not lethal. Intravenous LD<sub>50</sub> values in rat and mouse were 83 mg/kg and 77 mg/kg, respectively.

## DOSAGE AND ADMINISTRATION:

### Duodenal Ulcer

The current recommended adult oral dosage of ZANTAC® for duodenal ulcer is 150 mg twice daily, the only dose shown to speed healing of duodenal ulcer in U.S. clinical trials. Smaller doses have been shown to be equally effective in inhibiting gastric acid secretion in U.S. studies, and several foreign trials have shown that 100 mg b.i.d. is as effective as the 150 mg dose.

Antacids given concomitantly and as needed for relief of pain do not interfere with the absorption of ZANTAC.

Since 37% of patients can be expected to show complete healing at the end of two weeks, endoscopy at that time may spare many patients an additional period of treatment.

### Pathological Hypersecretory Conditions

(such as Zollinger-Ellison Syndrome)

Recommended adult oral dosage: 150 mg twice a day. In some patients it may be necessary to administer ZANTAC 150 mg doses more frequently. Doses should be adjusted to individual patient needs, and should continue as long as clinically indicated. Doses up to 6 g/day have been employed in patients with severe disease.

### Dosage adjustment for patients with impaired renal function.

On the basis of experience with a group of subjects with severely impaired renal function treated with ZANTAC, the recommended dose in patients with a creatinine clearance less than 50 ml/min is 150 mg every 24 hours. Should the patient's condition require, the frequency of dosing may be increased to every 12 hours or even further with caution. Hemodialysis reduces the level of circulating ranitidine. Ideally, the dosage schedule should be adjusted so that the timing of a scheduled dose coincides with the end of hemodialysis.

## HOW SUPPLIED

ZANTAC® Tablets (ranitidine hydrochloride equivalent to 150 mg ranitidine) are white tablets embossed with "ZANTAC 150" on one side and "Glaxo" on the other. They are available in bottles of 60 tablets (NDC 0173-0344-42) and unit dose packs of 100 tablets (NDC 0173-0344-47).

Store at controlled room temperature in a dry place. Protect from light. Replace cap securely after each opening. Manufactured for Glaxo Inc., Ft. Lauderdale, FL 33309 by Glaxo Operations UK Ltd, Greenford, England.

Issued May 1983

# Glaxo

Glaxo Inc., Research Triangle Park, NC 27709



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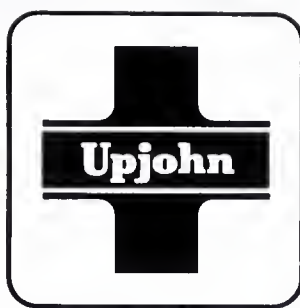
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Yalles, Milton	PTH	Jau, Emerson M.F.	PM*, GER	Janes, William P.G.	PUD*, IM*	<b>OTHER</b>	
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## **American Medical Association Principles of Medical Ethics**

### **PREAMBLE:**

The medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility not only to patients, but also to society, to other health professionals, and to self. The following Principles adopted by the American Medical Association are not laws, but standards of conduct which define the essentials of honorable behavior for the physician.

- I. A physician shall be dedicated to providing competent medical service with compassion and respect for human dignity.
- II. A physician shall deal honestly with patients and colleagues, and strive to expose those physicians deficient in character or competence, or who engage in fraud or deception.
- III. A physician shall respect the law and also recognize a responsibility to seek changes in those requirements, which are contrary to the best interests of the patient.
- IV. A physician shall respect the rights of patients, of colleagues, and of other health professionals, and shall safeguard patient confidences within the constraints of the law.
- V. A physician shall continue to study, apply and advance scientific knowledge, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated.
- VI. A physician shall, in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical services.
- VII. A physician shall recognize a responsibility to participate in activities contributing to an improved community.

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**HILO HOSPITAL** . . . . . 961-4211

1190 Waionuenue Ave., Hilo 96720  
Andrew Sockett, M.D., Acting Administrator  
276 beds

**HONOKAA HOSPITAL** . . . . . 775-7211

Box 37, Honokoo 96727  
Yashita Iwamoto, Administrator  
35 beds

**KA'U HOSPITAL** . . . . . 928-8331

Box 248, Poholo 96777  
Kenji Nagao, Administrator  
15 beds

**KOHALA HOSPITAL** . . . . . 889-6211

Box 10, Kopou 96755  
Ruby Isaacs, Administrator  
26 beds

**KONA HOSPITAL** . . . . . 322-9311

Box 69, Kealahou 96750  
Jennie Wung R.N., Acting Administrator  
75 beds

### KAUAI

**KAUAI VETERANS MEMORIAL HOSPITAL** 338-9431

Box 337, Waimea 96796  
Richard Johnston, Administrator  
44 beds

**SAMUEL MAHELONA MEMORIAL  
HOSPITAL** . . . . . 822-4961

4800 Kowihau Rd., Kapaa 96746  
John English, Administrator  
76 beds

**G.N. WILCOX MEMORIAL HOSPITAL** . . . 245-4811

3420 Kuhio Highway, Lihue 96766  
Phil Palmer, Administrator  
155 beds

### LANAI

**LANAI COMMUNITY HOSPITAL** . . . . . 565-6411

Box 707, Lanai City 96763  
Richard Pittsinger, Administrator  
14 beds

### MAUI

**HANA MEDICAL CENTER** . . . . . 248-8035

Hana 96713  
Milton M. Howell, M.D., Administrator  
4 beds

**KULA HOSPITAL** . . . . . 878-1221

Kula 96790  
Russell Tucker, Administrator  
105 beds

**MAUI MEMORIAL HOSPITAL** . . . . . 244-9056

221 Mahalani St., Wailuku 96793  
Jerry Wolker, Administrator  
145 beds

### MOLOKAI

**MOLOKAI GENERAL HOSPITAL** . . . . . 553-5331

Box 408, Kounokakai 96748  
Ermo Moriono, Administrator  
27 beds

HAWAII MEDICAL JOURNAL

# OAHU

## CASTLE MEMORIAL HOSPITAL . . . . . 261-0841

640 Ulukahiki St., Kailua 96734  
Dr. Herbert Z. Shirama, President  
136 beds

## HALE MOHALU HOSPITAL . . . . . 734-0221

3675 Kilauea Ave., Hanalulu 96816  
Erida Reichert, M.D., Administrator ext. 362 & 363  
21 beds

## HAWAII STATE HOSPITAL . . . . . 247-2191

45-710 Kealahala Rd., Kaneohe 96744  
Howard Gudeman, Ph.D., Administrator  
220 beds

## KAHUKU HOSPITAL . . . . . 293-9221

Box 218, Kahuku 96731  
Rikia Tanji, Administrator  
26 beds

## KAISER FOUNDATION HOSPITAL . . . . . 949-5811

1697 Ala Moana, Hanalulu 96815  
Ronald Mikolajczyk, Administrator  
174 beds

## KAPIOLANI-CHILDREN'S MEDICAL CENTER . . . . . 947-8511

1319 Punahou St., Hanalulu 96826  
Richard Davi, President  
Paul Caak, Executive Vice President  
216 beds

## KUAKINI MEDICAL CENTER . . . . . 536-2236

347 North Kuakini St., Hanalulu 96817  
Masaichi Tasaka, President  
400 beds

## LEAHI HOSPITAL . . . . . 734-0221

3675 Kilauea Ave., Hanalulu 96816  
Abraham Chay, Administrator  
242 beds

## QUEEN'S MEDICAL CENTER . . . . . 538-9011

1301 Punchbowl St., Hanalulu 96813  
George C. Balian, M.D., Acting President  
506 beds

## REHABILITATION HOSPITAL OF THE PACIFIC . . . . . 531-3511

226 North Kuakini St., Hanalulu 96817  
Patrick J. Duarte, Administrator  
100 beds

## SAINT FRANCIS HOSPITAL . . . . . 547-6011

2230 Liliha St., Hanalulu 96817  
Sister Maureen Keleher, O.S.F., Executive Director and Chief Executive Officer  
Michael Matsuura, Administrator  
308 beds

## SHRINERS HOSPITAL FOR CRIPPLED CHILDREN . . . . . 941-4466

1310 Punahou St., Hanalulu 96826  
Kenneth L. Marshall, Administrator  
40 beds

## STRAUB CLINIC & HOSPITAL, INC. . . . . 523-2311

888 South King St., Hanalulu 96813  
Thomas Battista, Executive Administrator  
Richard Stenson, Administrator  
152 beds

## TRIPLER ARMY MEDICAL CENTER . . . . . 433-6661

Tripler AMC 96859  
Col. Jahn C. Richards, Commanding Officer  
560 beds

## WAHIAWA GENERAL HOSPITAL . . . . . 621-8411

128 Lehua St., P.O. Box 580, Wahiawa 96786  
Philip R. Balich, Administrator  
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Kauai-338-1645

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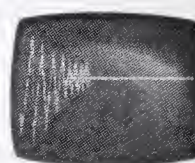
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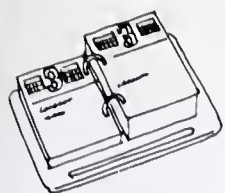
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## Continuing Medical Education

### CALENDAR OF ACCREDITED EVENTS—CATEGORY I

Accredited Programs of CME allows one unit of AMA credit for each hour of instruction excluding all breaks.\* Asterisked programs also are accredited for AAFP Prescribed credit.

#### LOCAL ACCREDITED PROGRAMS ONGOING

##### American Cancer Society, Hawaii Pacific Division

1. Telephone Task Force w/G.N. Wilcox Memorial Hospital, First Thursday, 12:45 p.m. and Fourth Tues. 12:30 p.m. w/ Maui Mem. Hosp. Held on Oahu at Am. Cancer Society main conf. room, 200 N. Vineyard, Honolulu.
2. Windward Oncology Conference w/Castle Memorial Hospital, Second and Fourth Tuesday, 12:30 p.m.

##### John A. Burns School of Medicine

1. Dept. of Medicine
  - \*A. Case Conferences, Second and Fourth Tuesdays, 12:30-1:30 p.m., Queen's University Tower, Room 618.
  - \*B. Grand Rounds, First and Third Tuesdays, 12:30-1:30 p.m., Queen's University Tower, Room 618.
  - C. Endocrinology Grand Rounds, Second Thursday, 5:30-6:30 p.m., Queen's University Tower, Room 506.
  - D. UH-Queen's Conference, Every Friday, 8:00-9:00 a.m., Queen's Medical Center, Mabel Smythe Auditorium.
  - E. Cardiology Grand Rounds, Third Tuesdays, 5:30-6:30 p.m., Queen's University Tower, Room 508.
  - F. Infectious Disease Grand Rounds, Second and Fourth Tuesdays, 5:00-6:00 p.m., Queen's Nalani I Conference Room.
  - G. Dermatology Grand Rounds, Second Wednesday, 7:30-9:30 a.m., Queen's Medical Center, Queen Emma Clinic.
  - H. Pulmonary Grand Rounds, Fourth Monday, 12:30-1:30 p.m., Queen's Medical Center, Kamehameha Lounge.
  - I. Nuclear Medicine Grand Rounds, Third Wednesday, 5:00-6:30 p.m., Straub Hospital, Doctors' Dining Room.
  - J. Medical-Surgical GI Grand Rounds, Third Friday, 12:45-1:45 p.m., Kuakini Hospital, PB4 Classroom.
  - K. Hematology Grand Rounds, Fourth Monday, 12:30-1:30 p.m., Queen's University Tower, Room 721.
  - L. Nephrology Conference, First Monday, 1:00-2:00 p.m., St. Francis Hospital, Sullivan IV Classroom.
  - M. G.I. Journal Club, First Thursday, 5:00-6:00 p.m., Straub Clinic and Hospital, Fourth Floor Conference Room.
2. Dept. of Obstetrics and Gynecology
  - \*A. Grand Rounds, Every Wednesday, 7:30-8:30 a.m., Kapiolani-Children's Medical Center, Second Floor Auditorium.
3. Division of Orthopedics
  - A. Fracture Conference, Every Monday, 5:00-6:00 p.m., Queen's University Tower, Room 618.
4. Dept. of Pediatrics
  - A. Grand Rounds, Every Thursday, 8:00-9:00 a.m., Kapiolani-Children's Medical Center, Second Floor Auditorium.
  - B. Pediatric Monday Noon Conference, 12:45-1:45 p.m., Kapiolani-Children's Medical Center, Second Floor Auditorium.
  - C. Pediatric Infectious Disease Conference, Every Thursday, 12:30-1:30 p.m., Kapiolani-Children's Medical Center, Conference Room B.
  - D. Perinatal Grand Rounds, Every Friday, 8:15-9:15 p.m., Kapiolani-Children's Medical Center, Conference Room B.
5. Dept. of Psychiatry
  - A. Grand Rounds, Every Friday, 8:00-9:30 a.m., Queen's University Tower, Room 618. Canceled during summer.
6. Dept. of Surgery
  - A. Grand Rounds, First, Second, and Third Saturdays, 7:30-9:00 a.m., rotating hospitals.
  - B. Statistical M and M, last Saturday, 7:30-9:00 a.m., rotating hospitals.
  - C. Journal Club, First and Third Tuesdays, 6:00-8:00 p.m., Queen's University Tower, Room 620.
  - D. Medical-Surgical GI Rounds, Third Friday, 12:45-1:45 p.m., Kuakini Medical Center, PB4 Classroom.
  - E. Pediatric Surgical Grand Rounds, First Friday, 12:45-1:45 p.m., Kapiolani-Children's Medical Center, Conf. Rm. 5.

F. Basic Science Lecture, Wednesdays, 7:15-8:15 a.m., Queen's University Tower, Room 618.

- \* 7. Dept. of Family Practice
  - A. Conference, Fourth Wednesday, 1:00-2:00 p.m., Kapiolani-Children's Medical Center, Second Floor Executive Dining Room.
8. HI Oncology Group, one Monday a month, 12:30-1:30 p.m., The Cancer Center, 1236 Lauhala St., 4th Floor Conference Room.

##### Hawaii Ophthalmological Society

1. Monthly dinner meeting, Third Thursday of each month cancelled July, August and December. Contact: O.D. Pinkerton, M.D., at (808) 943-0009.

##### Hawaii Thoracic Society

1. Case presentations & current research in pul. med. with U. of H. Sinclair Chest Club, Third or Fourth Wednesdays, each month, 6:00 a.m.-7:30 p.m. Contact: Rosemary Respicio, B.S.N., at (808) 537-5966.

##### Hickam Clinic

1. Professional Staff Seminar, Thursday, 3:00 p.m. Contact: Tom Davidson, M.D. (808) 449-9907.

##### Hilo Hospital

1. Tumor Conference, First Friday, 12:30 p.m.
2. X-ray Conference, Second Friday, 12:30 p.m.
3. Clinical Pharmacology, Third Friday, 12:30 p.m.
4. Pathology Conference, Fourth Friday, 12:30 p.m.
5. ETV and Visiting Professors Saturdays, 7:00 a.m.

##### Kaiser Hospital

1. Medicine Grand Rounds, Every Tuesday, 8:00 a.m. Pac. Aud. 1 hr. Cat. 1.
2. Tumor Board, Every Tuesday, 12:00. Pac. Aud. 1 hr. Cat. 1.
3. OB/Ped. Perinatal Mortality Conference, Last Tuesday, each month, 8:00 a.m. 1 hr. Cat. 1.
4. Surg. Grand Rounds, Every Friday, 8:00 a.m. Pac. Aud. 1 hr. Cat. 1.
5. Saturday Morning Educational Conference, Every Saturday, 7:30 a.m. Pac. Aud. 1 hr. Cat. 1. (Contact CME Dept.-Kaiser for further information)
6. OB-Path Conference, First Monday of each month, 8:00 a.m., 1 hr.

##### Kapiolani-Children's Medical Center

1. Pediatric Grand Rounds, Every Thursday, 8:00-9:00 a.m., Aud.
2. Pediatric Conference, Every Monday, 12:45-1:45 p.m., 2nd Floor Aud.
3. Perinatal Grand Rounds Every Friday, 8:15-9:15 a.m. Conference Room B.
4. Pediatric Infectious Disease Conference, Every Thursday, 12:30-1:30 p.m., 3rd Floor Conf. Rm.
5. Ob-Gyn Conference, Every Tuesday, 1:00-2:00 p.m., Aud.
  - First—Didactic Presentation
  - Second—Perinatal-Neonatal Topics
  - Third—Obstetrics Topics
  - Fourth—Gyn Topics
6. Tumor Board, Oncology Conference, First and Third Friday, 1:00-2:00 p.m., Aud.

##### Kuakini Medical Center

1. Visiting Professor Program (for further info contact CME Dept. at 547-9226 as these programs subject to change).
2. Nuclear Medicine Conference, Third Monday, 1:00 p.m., Makai Conference Room.
3. Dept. of Ophthalmology, First Tuesday, 12:30 p.m., Private Dining Room.
4. Dept. of Medicine, Fourth Tuesday, 1:00 p.m., Hale Pulama Mau Auditorium
5. G.I. Conference, Second Wednesday, 12:30 p.m., Makai Conference Room.
6. Oncology Conference, Every Thursday, 7:30 a.m., PB-4 Conference Room.
7. Cardiology Conference, First Thursday, 12:30 p.m., Makai Conference Room.
8. Nephrology Conference, Second Thursday, 8:00 a.m., Makai Conference Room.
9. Pulmonary Conference, Second Thursday, 1:00 p.m., Makai Conference Room.
10. Hematology Conference, Third Thursday, 12:30 p.m., Makai Conference Room.
11. Surgical Conference, First and Second Friday, 12:45 p.m., PB-4 Conference Room.
12. Surgical M&M Conference, Fourth Friday, 12:45 p.m., PB-4 Conference Room.

##### Maui Memorial Hospital

1. Thursday Conference, 7:00-8:00 a.m., Staff Dining Room.
  - First—Dept. of Medicine
  - Second—Dept. of Surgery
  - Third—Dept. of OB/GYN
  - Fourth—Dept. of Pediatrics
  - Fifth—Elective
2. Tumor Board, Every Monday, 12:15-1:15 p.m.—Tumor Conference Telephone Task Force—Third Tuesday, 12:15-1:15 p.m.



3. Dept. of Emergency Medicine, Third Monday, 7:00-8:00 a.m.
4. Diagnostic Radiology, Fourth Tuesday, 12:00-1:00 p.m.

#### The Queen's Medical Center

1. ENT Conferences, First and Second Fridays, 7:30 a.m., Small Dining Room.
2. Medical Conferences, Every Friday, 8:00 a.m., Mabel Smyth Auditorium.
3. OB/GYN Conferences, Every Monday, 1:00 p.m., Kam Auditorium.
4. Ophthalmology Conference, Fourth Tuesday, 4:45 p.m., Queen Emma Eye Clinic.
5. Orthopedic Conferences, Every Wednesday, 7:00 a.m., Kam Auditorium.
6. Pathology Conferences, Every Wednesday, 7:00 a.m., Nalani I Conference Room.
7. Pediatric Grand Rounds, Fourth Thursday, 12:30 p.m., Harkness Board Room.
8. Surgical Trauma Conference, Second Tuesday, 4:30 p.m., Kam Auditorium.

#### St. Francis Hospital

1. SFH-UH Tumor Conference, Every Monday, 7:30 a.m., Sullivan-4 Classroom.
2. EENT Meeting, First Tuesday, 7:00 a.m., Sullivan-4 Classroom.
3. SFH-UH Hematology Conference, Third Thursday, 12:30 p.m., Sullivan-4 Classroom.
4. SFH-UH Surgical Grand Rounds, First, Second & Third Fridays, 7:30 a.m., Sullivan-4 Classroom.
5. Visiting Professor Programs (for further info call CME office at St. Francis).

#### Straub Clinic & Hospital

1. Cardiac Surgery Conference meets the Fourth Tuesday of each month, from 4:30-5:30 p.m., in the Doctors' Dining Room.
2. Community Peripheral Vascular Conference meets the Third Thursday of each month from 5:00-6:30 p.m., in the Doctors' Dining Room.
3. Department of Anesthesiology meets the Second Tuesday of each month from 7:00-8:00 a.m., in the Doctors' Dining Room.
4. Friday Noon Conference meets Every Friday of each month from 12:30-1:30 p.m., in the Doctors' Dining Room (1 hr CME credit).
5. Medical Morbidity and Mortality Conference meets the Third Wednesday of each month from 8:00-9:00 a.m., in the Doctors' Dining Room (1 hr CME credit).
6. Neuropathology Conference meets every Fourth Saturday of each month from 8:00-9:00 a.m., in the Doctors' Dining Room (1 hr CME credit).
7. Patient Care Conference, formerly Straub Professional Seminar, meets every Second Tuesday of each month from 5:00-6:00 p.m. in the Doctors' Dining Room (1 hr CME credit).
8. Surgical Mortality and Morbidity Conference meets every Fourth Thursday of each month from 7:00-8:00 a.m. in the Doctors' Dining Room.
9. Visiting Professor Conference meets periodically on Thursday from 7:00-8:00 a.m. in the Doctors' Dining Room (1 hr CME credit).

\*Note: All conferences subject to change. Monthly calendar will be available upon request.

#### Wahiawa General Hospital

1. Noon Seminars, Every Tuesday
2. HAWAIIAN TIME in the Board Room Contact: June 621-

8411, Ext. 205.

#### Wilcox Hospital (Lihue)

1. General Medical Staff Meeting, Quarterly in January, April, July & October.
2. Clinical Review Meeting, Every Monday at Noon, except the last Monday of the month.
3. Tumor Conference, First Thursday.

#### Miscellaneous

HMA Maternal and Perinatal Mortality Study Committee, First Monday, 5:30 p.m. 320 Ward Ave., Suite 200.  
Cat. 1 on hr. for hr. basis.

Hawaii Melanoma Tumor Board, 3rd Friday of month, 12:30-1:30 p.m., Cancer Center of Hawaii, 1236 Lauhala St., Honolulu, Hawaii Room 501. Contact: Bonnie Brannon 548-8777.

### SPECIAL EVENTS

- |                       |  |
|-----------------------|--|
| *Sept. 24-30, 1983    | American Urological Association—New York Section. AT: Sheraton Royal Waikoloa, Big Island, Hawaii. Contact: Arthur Tessler, M.D., 530 First Avenue, New York, N.Y. 10016.  |
| *Oct. 8-10, 1983      | Hawaii Medical Association 127th Annual Scientific Meeting. AT: Hotel Inter-Continental Maui, Hawaii. Contact: Irene Wong, 320 Ward Avenue, Suite 200 Honolulu, Hawaii 96814.  |
| Oct. 24-29, 1983      | Allergy and Immune Diseases in Children. Contact: Symposium Maui, Inc., P.O. Box 10185, Lahaina, Maui, Hawaii 96761. AT: Kapalua Bay Hotel, Lahaina, Maui. 22 hours, Category I.   |
| Nov. 18-19, 1983      | Diagnostic Imaging for the Clinician. AT: Honolulu Academy of Arts Theatre, Honolulu, Hawaii. Contact: Rose Voulgaropoulos, 888 S. King Street, Honolulu, Hawaii 96813 (808) 523-2311, Ext. 8152. 8 hours, Category I.         |
| Dec. 27-29, 1983      | ABCs of Allergy-Immunology. Contact: Symposium Maui, Inc., P.O. Box 10185, Lahaina, Maui, Hawaii 96761. AT: Royal Lahaina Resort, Kaanapali, Maui, Hawaii. 13 1/2 hours, Category I.   |
| *Jan. 16-20, 1984     | The Honolulu Medical Group Research and Education Foundation "Gastro-Intestinal and Hepatic Diseases." AT: Mauna Kea Beach Hotel, Big Island, Hawaii. Contact: Yvonne Brewer, 550 S. Beretania Street, Honolulu, Hawaii 96813. |
| *Jan. 23-Feb. 2, 1984 | Estes Park Institute Convention. AT: Kauai Surf and Maui Surf hotels. Contact: Tomi Wilson P.O. Box 400, Englewood, Colo. 80151.   |
| *April 1-5, 1984      | American College of Surgeons-Spring Meeting. AT: Hilton Hawaiian Village & Westin Ilikai, Honolulu, Hawaii. Contact: Fred Spillman, 55 East Erie Street, Chicago, Ill. 60611.  |

\* Conventions

### Highlights of the June 3, 1983 HMA Council Meeting

- Latest official tabulation showed 1,282 total HMA members, with 789 Active full-pay members, up from 1,137 and 751 for the same period, 1982. President Calvin Kam is researching reasons for 28 members dropping out (2 of these moved from Hawaii).

- HMA Travel Club/Century Travel Hawaii is offering packaged travel arrangements to the HMA Annual Meeting on Maui, October 8-10. Special excursion air fares or reduced rate tickets with Hawaiian Airlines, plus significant savings on car rentals, are being offered. Some post-convention options will be offered. Flyers with details are to be mailed to HMA members and to physicians on the Mainland.

- A resolution will come up at the 1984 State Legislature on medical records and retention thereof. HMA has gone on record recommending retention of medical records for 10 years, or, for a minor, 10 years from the age of majority. Council is urging all members not to destroy medical records until some appropriate length of time has been established.

- A&T Printing, owned by HMA, after a 1982 deficit, had so far shown a small profit by April '83. Members are encouraged

to give their printing business to A&T, and to suggest that their non-medical friends have A&T do their printing of office forms and stationery.

- Other state medical associations are taking on active programs against drunk driving, with newspaper ads (Oregon) and special educational material (Texas). Dr. Michael Irwin of Hilo has a program to present to HMA for media coverage. This program will be handled through HMA's Public Safety Committee.

- Kauai was still without a District Health Officer, and this has created some problems, reported Dr. Paul Esaki.

- Private administration for Hilo and Kona Hospitals was being discussed in joint meetings, according to Dr. Kenneth Grant of the West Hawaii Medical Society. The psychiatric department at Kona Hospital has been officially closed and there is no longer a psychiatrist on the hospital staff. Direct emergency radio communications between Dr. Sitkin and the Emergency Medical Service, and Kona hospital are being set up. Kona has had to go through Hilo communications, which has been cumbersome and dangerous.

- Development of a booklet summarizing Hawaii State laws affecting medical practice was discussed. Ohio has published such a booklet for their state.



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OCTOBER 1983  
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**HMA 127th Annual Meeting, Wailea, Maui,  
October 8-10, 1983**





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FOR YOUR EXCESSIVELY  
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OF VALIUM  
diazepam/Roche





**BENEFIT:** reassurance through rapid onset of action. Anxious patients know it's working from the very first dose—usually within 30 to 90 minutes. **BENEFIT:** predictability that increases patient acceptance. Steady-state levels are predictably achieved. Blood levels plateau within five to seven days without accumulating beyond; once these levels are reached, discomforting symptoms rarely break through. **BENEFIT:** an unmatched therapeutic index that reinforces patient confidence. Few drugs, if any, can match the safety and efficacy profile of Valium (diazepam/Roche). Over time. Over millions of doses and in millions of patients. **BENEFIT:** tapering action enhances the ease of discontinuation of therapy. Because of the differing half-lives of its active metabolites, Valium has a built-in tapering action that complements gradual dosage reduction and helps smooth discontinuation of therapy. **BENEFIT:** Valium is the one you know best, the one about which you can best counsel your patient. Advise that side effects other than drowsiness, ataxia or fatigue are rare and seldom severe. Of course, as with any benzodiazepine, you will want to caution against driving, operating hazardous machinery or ingesting alcohol and other CNS-depressant drugs during therapy. In elderly and debilitated patients, it is recommended that the dosage be limited to the smallest effective amount to preclude the development of ataxia or oversedation. **BENEFIT:** flexibility that allows you to tailor dosage. Only Valium offers the flexibility of scored tablets—in 2-mg, 5-mg and 10-mg strengths—plus I.M. or I.V. administration and Valrelease™ (diazepam/Roche) 15-mg slow-release capsules. Valrelease capsules offer all the benefits of Valium 5 mg *t.i.d.* with the convenience of once-daily dosage.

THE LEADER... BECAUSE THE BENEFITS ADD UP

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2-mg, 5-mg, 10-mg scored tablets





**Valium® (diazepam/Roche)® Tablets**  
**Valrelease™ (diazepam/Roche)® slow-release Capsules**  
**Injectable Valium® (diazepam/Roche)®**

Before prescribing, please consult complete product information, a summary of which follows:

**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion.

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindications:** Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**ORAL:** Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

**INJECTABLE:** To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used I.V.: inject slowly, taking at least one minute for each 5 mg (1 ml) given; do not use small veins, i.e., dorsum of hand or wrist; use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea; have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

**Precautions:** If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, i.e., phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over sedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**INJECTABLE:** Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

**Adverse Reactions:** Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depres-

sion, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

**INJECTABLE:** Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation. Laryngospasm/pain in throat or chest have been reported.

**Dosage:** Individualize for maximum beneficial effect.

**ORAL Adults:** Anxiety disorders, relief of symptoms of anxiety—Valium tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

**Geriatric or debilitated patients:** Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

**Children:** Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

**INJECTABLE:** Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.) For dosages in infants and children see below; have resuscitative facilities available.

**I.M. use:** by deep injection into the muscle.

**I.V. use:** inject slowly, take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children administer I.V. slowly; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful.

In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

**Management of Overdosage:** Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, I.V. fluids, adequate airway. Use levarterenol or metaraminol for hypotension. Dialysis is of limited value.

**How Supplied:**

**ORAL Valium (diazepam/Roche) scored tablets**—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

**Valrelease (diazepam/Roche) slow-release capsules**—15 mg (yellow and blue), bottles of 100, Prescription Paks of 30.

**INJECTABLE:** Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.





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\*Shils ME, Randall HT: Diet and nutrition in the care of the surgical patient, chap. 36, in *Modern Nutrition in Health and Disease*, edited by Goodhart RS, Shils ME; Philadelphia, Lea & Febiger, 1980, p. 1084.

Please see summary of product information on reverse page.



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**INDICATIONS:** Prophylactic or therapeutic nutritional supplementation in physiologically stressful conditions, including conditions causing depletion, or reduced absorption or bioavailability of essential vitamins and minerals; certain conditions resulting from severe B-vitamin or ascorbic acid deficiency; or conditions resulting in increased needs for essential vitamins and minerals.

**CONTRAINDICATIONS:** Hypersensitivity to any component.

**WARNINGS:** Not for pernicious anemia or other megaloblastic anemias where vitamin B<sub>12</sub> is deficient. Neurologic involvement may develop or progress, despite temporary remission of anemia, in patients with vitamin B<sub>12</sub> deficiency who receive supplemental folic acid and who are inadequately treated with B<sub>12</sub>.

**PRECAUTIONS:** *General:* Certain conditions may require additional nutritional supplementation. During pregnancy, supplementation with vitamin D and calcium may be required. Not intended for treatment of severe specific deficiencies. *Information for the Patient:* Toxic reactions have been reported with injudicious use of certain vitamins and minerals. Urge patients to follow specific dosage instructions. Keep out of reach of children. *Drug and Treatment Interactions:* As little as 5 mg pyridoxine daily can decrease the efficacy of levodopa in the treatment of parkinsonism. Not recommended for patients undergoing such therapy.

**ADVERSE REACTIONS:** Adverse reactions have been reported with specific vitamins and minerals, but generally at levels substantially higher than those in Berocca Plus. However, allergic and idiosyncratic reactions are possible at lower levels. Iron, even at the usual recommended levels, has been associated with gastrointestinal intolerance in some patients.

**DOSAGE AND ADMINISTRATION:** Usual adult dosage: one tablet daily. Not recommended for children. Available on prescription only.

**HOW SUPPLIED:** Golden yellow, capsule-shaped tablets — bottles of 100.



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## President's Message

### In appreciation

At our annual meeting this weekend, Dr. Sakae Uehara will be installed as the next President of the Hawaii Medical Association. This comes at a time when concepts such as UCR, HMO, and IPA have been studied and tried in a social system that is deteriorating to TEFRA, DRGs, PPOs, and PRO. Having a president who started with plantation medicine, fought for UCR, has an excellent understanding of TEFRA and DRGs, plus leads your association in the PRO effort, will be an asset to the association. Dr. Uehara began his general surgery practice in Maui in 1965, and within a short period of time, served as the President of Maui County Medical Society and Chief of Medical Staff for the Maui Memorial Hospital. This, of course, required a lot of experience in hospital and medical staff affairs that will be extremely valuable. He has contributed to your medical association and to PSRO and has served on comprehensive health planning and SHPDA. His knowledge and expertise will strengthen and guide your association at a critical time. Please join us, welcome, and support Dr. Uehara in Maui this weekend.

Dr. George Mills has ended his six-year term as a trustee for the American Medical Association. As your representative, it was my privilege to experience the political activity at the annual meeting of the AMA House of Delegates. Outstanding members have been nominated for key positions, and the leaders selected have been excellent. To have one of our best serve on the governing body of the American Medical Association was indeed an honor, recognition of a talent, and a feat that probably cannot be duplicated in the future by any small state because of financial restrictions. Dr. Mills has dedicated two months a year for the past six years to the American Medical Association activities in Chicago and served on the Council of your Hawaii Medical Association for the past 21 years. Your association is grateful for his dedication and proud that he has done this on our behalf. He may have finally gone fishing, but his dedication and responsibility is still to your association, and your association will continue to benefit from his services.

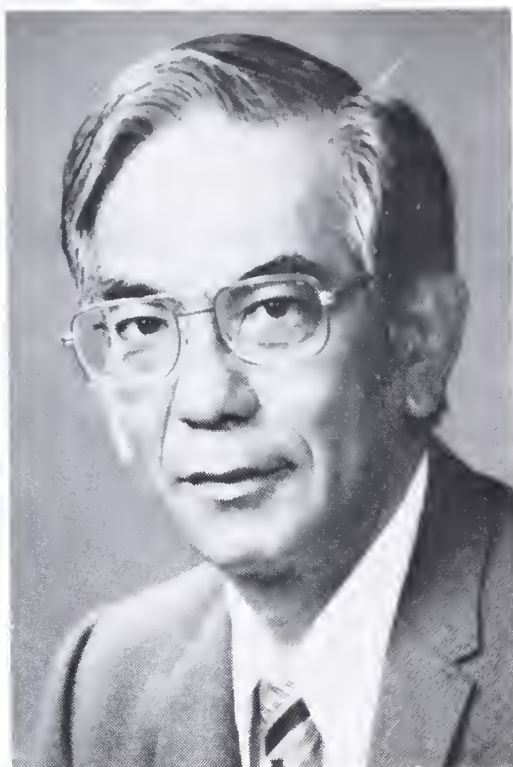
Dr. Herbert Chinn, who has served for more than a quarter of a century on one committee or another in our organization, will be ending his term this year as our delegate to the AMA. In his nine years as delegate and alternate delegate, Dr. Chinn has established rapport and support with many other delegates in the association and his contacts, opinions, and decisiveness will be missed in the House of Delegates. He was sorely missed at this past meeting by our medical association; and many delegates missed seeing him. Having served on many hospital and association committees with Dr. Chinn, I have always respected the tenacious way he may hold an opposing view, but the right to discuss and communicate, and access to his opinions always remained. He is respected for his dedication to the physicians and to medicine, especially in hospital affairs.

Significant in our association is the continued active participation of many of your recent past presidents. Dr. Ann Catts is presently involved in our Physician-Nurse Relationship Committee, Dr. Neal Winn heads the Business Medicine coalition, Dr. Douglas Bell and Dr. George Goto continue to be involved in legislative activities, Dr. Marion Hanlon has been involved with health care costs, Dr. William Dang headed your Peer Review Committee and served on the Bylaws Committee, and Dr. Calvin Sia has been active in the Academy of Pediatrics and SHPDA activities. They have not claimed that they have done their share for the association, and their continued efforts are again appreciated. The leaders of your association represent various specialties and have different interests, all of which have

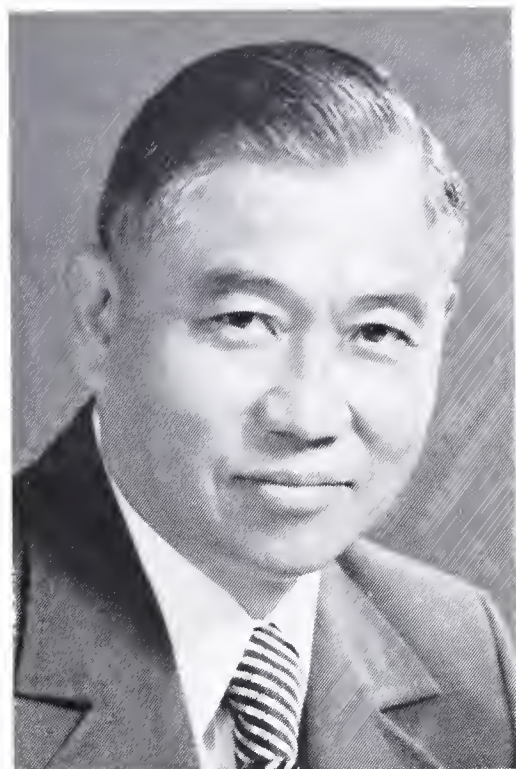




George H. Mills, M.D.  
Honolulu  
Retiring Trustee of the  
American Medical Association



Sakae Uehara, M.D.  
Maui  
Incoming President of the  
Hawaii Medical Association



Herbert Y.H. Chinn, M.D.  
Honolulu  
Hawaii Medical Association  
Delegate to the  
American Medical Association

helped to contribute to the success of the organization.

Membership in our organization has been increasing slowly, about 5% a year for full-dues-paying members. Nevertheless, several members drop out annually. Some of these members were contacted this year, and their reasons were primarily financial or personal. At a time when an association must be at its strongest to face challenges from without, it is unfortunate to have any lack of support from within. Intraprofessional problems and concerns must be faced with the responsibility of the members to communicate and express their concerns and opinions, but also to listen to and appreciate the concerns of the majority. There is no sure way to advance the practice of medicine, but this privilege and responsibility should be ours. This right must be protected, and members should be secure in knowing that they do have a right to voice concern and participate in the deliberations. There is very little respect for a member who drops out just for a difference of opinion, and those that chose not to belong should not complain, but wither like sour grapes on a vine. Your association, however, will continue to accept criticism, suggestions, and comments from the membership. There is concern, even though there is an excess of doctors, if a physician cannot justify the cost of a pack of cigarettes a day (that he shouldn't be smoking anyway) to pay his share of dues and support and protect his profession in Hawaii.

It has been my privilege to serve as your president and represent an association dedicated to improving the quality of care while being concerned with cost containment, and be part of an organization dedicated to peer review and professional activities. It was a privilege to work with your executive officers who have contributed much with their variety of talents, and it was a challenge to work with a Council with such a variety of opinions and concerns. All their efforts have been appreciated. Join us in Maui.

Calvin C.M. Kam, M.D.  
Retiring President  
Hawaii Medical Association

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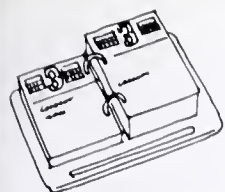
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## Continuing Medical Education

## CALENDAR OF ACCREDITED EVENTS—CATEGORY 1

Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks."

### LOCAL ACCREDITED PROGRAMS ONGOING

For complete list of ongoing programs, please refer to the September 1983 issue of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department. Phone (808) 536-7702.

### SPECIAL EVENTS

Oct. 8-15 1983	5th International Seminar on Operative Arthroscopy, University of California at Los Angeles Extension, Dept. of Health Sciences, 10995 LeConte Avenue, Los Angeles, Calif. 90024, (213) 825-8421. Travel Agent: GTU, Inc., 700 Larkspur Landing Circle, Larkspur, Calif. 94939, (415) 461-4650. To be held at the Maui Marriott.	Dec. 11-13 1983	American Hospital Association, Engineering Update, Contact: Bev Rogers, 333 N. Michigan Avenue, Chicago, Ill., 60601. To be held at the Westin Ilikai, Honolulu, Hawaii.
Oct. 8-16 1983	8th Annual International Body Imaging Conference, West Park Hospital, Dept. of Radiology, 22141 Roscoe Blvd., Canoga Park, Calif. 91304, (213) 340-0580, ext. 280. Travel Agent: Innovations in Travel, 9545 Reseda Blvd., #18, Northridge, Calif. 91324. To be held at the Hyatt Regency on Maui.	Dec. 13-16 1983	Sexually Transmitted Diseases, Honolulu Medical Group Research and Education Foundation, 550 S. Beretania Street, Honolulu, Hawaii 96813, (808) 537-2211. To be held at the Prince Kuhio Hotel, Honolulu, Hawaii.
Oct. 15-22 1983	Cardiology, University of Southern California School of Medicine Post-graduate Division, KAM 320, 2025 Zonal Avenue, Los Angeles, Calif., 90033, (213) 224-7047. To be held at the Mauna Kea Beach Hotel on the Big Island, Hawaii.	Dec. 26-30 1983	Emotional Growth in Adult Life, American Institute of Medical Education, (213) 842-8818. To be held at the Kona Hilton, Big Island, Hawaii.
Oct. 17-21 1983	Medical Oncology Boards Review Course, American College of Physicians, (800) 523-1546. To be held at the Prince Kuhio Hotel, Honolulu, Hawaii.	Dec. 28-30 1983	2nd Annual Alumni Course, Medical and Legal Questions, to be held at the University of Hawaii East-West Center. (Open to non-alumni as well.)
Oct. 22-29 1983	Non-Verbal Expression of Self, Dept. of Psychiatry, University of California (415) 681-8080. To be held on Kauai, Hawaii.	Jan. 16-20, 1984	Gastro-Intestinal and Hepatic Diseases, Honolulu Medical Group Research and Education Foundation, 550 S. Beretania Street, Honolulu, Hawaii 96813. To be held at the Mauna Kea Beach Hotel, Big Island, Hawaii.
Oct. 29-Nov. 5 1983	8th Annual Pediatrics for the Practitioner, Earl and Loraine Miller Children's Hospital, Memorial Hospital Medical Center of Long Beach, (213) 595-3823. To be held at the Mauna Kea Beach Hotel, Big Island, Hawaii.	Jan. 15-21, 1984	AMA Winter Scientific Session. Contact: Bob Hobart, Dept. of Meeting Management, 535 N. Dearborn Street, Chicago, Ill. 60610. To be held at the Sheraton Waikiki, Royal Hawaiian, Surfrider, Moana, and Princess Kaiulani hotels in Honolulu, Hawaii.
Oct. 29-Nov. 19 1983	Weekly workshops in different specialties—OB/GYN, ORTHO SURG, RAD, OPTH, ANES., INTL Association of Medical Specialists and Great Medical Getaways. At: cruise ship USS Constitution through Islands, Honolulu, Hawaii. Further information: (205) 991-5533.	Jan. 16-22, 1984	Second Annual Topics in Internal Medicine, University of Colorado Health Sciences Center, Office of Post-graduate Education, Campus Box C295, 4200 East 9th Avenue, Denver, Colo. 80262, (303) 394-5241.
Nov. 20-23 1983	The Fourth Annual "Sports Medicine Now" Program, American College of Sports Medicine and the University of Hawaii, (916) 486-5834. To be held at the Kapala Bay Hotel, Maui, Hawaii.	Jan. 22-26, 1984	8th Annual Echocardiography Conference, Honolulu Medical Group Research and Education Foundation, 550 S. Beretania Street, Honolulu, (808) 537-2211. To be held at the Kahala Hilton Hotel, Honolulu, Hawaii.
Nov. 26-Dec. 3 1983	Advances in Medicine, Methodist Hospital University of Tennessee, (901) 528-5547. To be held at the Hilton Hawaiian Village Hotel, Honolulu, Hawaii.	Jan. 21-28, 1984	12th Annual Diagnostic Radiology Seminar, University of California at San Francisco, Dept. of Radiology, Post-graduate Education, Room C324, Third & Parnassus Ave., San Francisco, Calif. 94143, (415) 666-5731. To be held on Kauai, Hawaii.
Nov. 27-Dec. 4 1983	Roche Sun Seminars, Infectious Diseases, Roche Laboratories & Creighton University, (203) 255-2618. To be held at the Inter-Continental Hotel, Wailea, Maui, Hawaii.	Feb. 4-10, 1984	Perinatal Medicine, University of Southern California School of Medicine, Post-graduate Division, KAM 320, 2025 Zonal Avenue, Los Angeles, Calif. 90033, (213) 224-7047. To be held at the Royal Lahaina Hotel on Maui, Hawaii.
Dec. 4-9 1983	Current Concepts in Emergency Care, 4th Annual, Institute for Emergency Education and WASA Chapter ACEP, (800) 426-2561. To be held at the Maui Surf Resort, Maui, Hawaii.	March 11-18, 1984	Kidney Diseases Course, University of Colorado Health Sciences Center, Office of Post-graduate Medical Education, Campus Box C295, 4200 East 9th Avenue, Denver, Colo. 80262, (303) 394-5241 or 394-5195. To be held on Maui.
Dec. 4-11 1983	Seminar in Medicine, Infectious Diseases, Roche Laboratories & Creighton University School of Medicine, (203) 255-2618. To be held at the Inter-Continental Hotel, Wailea, Maui, Hawaii.	March 15-17, 1984	Mid-Life Issues, Hawaii Psychiatric Society and Area VII of the American Psychiatric Association. For further information call D. Chang, (808) 947-8573. To be held at the Maui Inter-Continental Hotel, Maui, Hawaii.
Dec. 5-9 1983	Diagnostic Radiology Seminar, University of California at San Francisco, Dept. of Radiology, Post-graduate Education, Room C-324, Third & Parnassus, San Francisco, Calif. 94143, (415) 666-5731, to be held at the Hyatt Regency Maui, Hawaii.	March 16-23, 1984	The Spine, University of Washington, Continuing Medical Education, Health Sciences Center E-303, Seattle, Wash. 98195, (206) 543-1050. To be held at the Westin Wailea Beach Hotel, Maui, Hawaii.



# The Epidemiology of Ciguatera Fish Poisoning in Hawaii, 1975-1981

Bruce S. Anderson, Ph.D., M.P.H., J.K. Sims, M.D., Ned H. Wiebenga, M.D., M.P.H.†, and Mitsuto Sugi, B.A., Honolulu.

• *Human ciguatera fish poisoning is an endemic disease in Hawaii, confirmed by 203 reported cases of ciguatera between 1975 and 1981, caused by the consumption of toxic fish caught in Hawaii's waters. This contrasts with the nature of ciguatera in Hawaii prior to 1975, when it was predominantly associated with fish brought to Hawaii from areas outside the Hawaiian Islands. From 1975-1981, there were an average of 33.83 reported cases per year, with a substantial increase in the number of outbreaks in 1978, continuing through 1981. The pathognomonic manifestation of ciguatera in Hawaii—the temperature sensation reversal phenomenon—was observed in 48% of the reported cases. Radioimmunoassay (RIA) for ciguatoxin in the implicated fish assisted in establishing or confirming the diagnosis in the absence of suitable human laboratory tests. No deaths were reported during the 1975-1981 period attributable to ciguatera. To date, only two fatalities from ciguatera have been reported in Hawaii from 1900 to 1981, indicating a low (less than 1%) mortality rate for ciguatera in Hawaii.*

Human ciguatera fish poisoning results from the consumption of ordinarily edible reef fish but bearing a multiplicity of toxins, including ciguatoxin. These toxins, isolated from fish implicated in causing human ciguatera poisoning (henceforth referred to as ciguatera), including: ciguatoxin,<sup>1</sup> maitotoxin,<sup>2,3</sup> ciguatoxin-associated ATPase inhibitor,<sup>4</sup> maitotoxin-associated hemolysin (lysophosphatidyl choline),<sup>2</sup> scaritoxin,<sup>5</sup> and others. It has been hypothesized that the multiplicity of toxins in ciguatera accounts for the diverse clinical manifestations in human ciguatera poisoning.<sup>5,6</sup>

Two of the toxins isolated from fish implicated in causing ciguatera, namely ciguatoxin and maitotoxin, have been isolated from the microscopic (75 $\mu$  diameter) dinoflagellate *Gambierdiscus toxicus* Adachi and Fukuyo.<sup>7</sup> *G. toxicus*, intermittently a free-swimming organism, has a mucus membrane<sup>8</sup> which readily sticks to a variety of species of marine algae as an epiphyte.<sup>8,9</sup> The association of such benthic (i.e., sea bottom) algae with reef detritus may account for the recovery of ciguatoxin, maitotoxin, and a water-acetone soluble toxin from dead coralline debris in an area abundant with ciguateric fish.<sup>10</sup> Toxic *G. toxicus* (bearing ciguatoxin and maitotoxin) is the apparent origin of ciguatoxin in the food chain which leads to human ciguatera fish poisoning.<sup>9</sup> *G. toxicus* has been recovered from Hawaii's waters.<sup>9</sup>

Ciguatoxin is believed to accumulate in fish up the food chain. Reef detritivorous and herbivorous fish, such as the goatfish (e.g., Hawaiian weke, kumu, and moano), the surgeon fish (e.g., Hawaiian

palani and kala), and parrot-fish (e.g., Hawaiian uhu), consume *G. toxicus* in detritus and on algae, respectively. The ciguatera toxins are absorbed from the gastrointestinal tract of the fish and distributed to the liver, skeletal muscles, and other tissues of the fish. Carnivorous and omnivorous fish, such as the jacks (Hawaiian ulua, papio, kahala); barracuda (Hawaiian kaku); snappers (Hawaiian uku and opakapaka); moray eels (Hawaiian puihi and tohe); groupers (Hawaiian hapuupuu); and many others become toxic upon their consumption of toxic detritivorous and herbivorous fish. Human ciguatera fish poisoning results from the consumption of fish bearing the toxins.

The ciguatera toxins involved in human poisoning are thermostable and are not destroyed by cooking (frying, baking, broiling, boiling, steaming, smoking, soup/bouillabaisse preparation), by freezing, or by freeze-drying.<sup>11-16</sup> None of the common methods of preparing the fish for human consumption inactivate or neutralize the toxins.<sup>11</sup> The toxins do not alter the smell, taste, or coloration of the toxic fish tissues. Repetitive exposure to ciguateric fish apparently induces immune sensitization to fish in some individuals,<sup>6, 12, 13, 17-20</sup> which differs from classical allergy to fish (such as to cod and halibut).

In general, a knowledge of fish is invaluable in narrowing down the differential diagnosis of fish poisoning. Tetrodotoxification results from the consumption of toxic puffer fish (Hawaiian pu'u ola'i, 'o'opuhue, maki maki, 'o'opu kawa) or molas (Hawaiian makua, kunehi, opahu), which are rarely confused with any other fish. Histamine fish poisoning is limited to fish with red skeletal muscle, such as the tunas (Hawaiian ahi, aku), swordfish/marlin/sailfish (Hawaiian a'u), sardines, the dolphinfish (Hawaiian mahi

mahi), marine salmon (Australian kawaihae), and others. Hallucinatory mullet poisoning results from the consumption of the brain, spinal cord, or head of goatfish, mullet, and surmullet (potentially, the Hawaiian weke, moano, and kumu). Precise identification of the fish consumed in a fish poisoning is of utmost importance.

A quantitative chemical or instrumental assay (not a bioassay) for the ciguatera toxins is required for confirmation of many of the 425 species of fish which have been incriminated worldwide as causing ciguatera fish poisoning.<sup>22</sup> The identification of some of these fish has been facilitated by the development of a radioimmunoassay (RIA) for ciguatoxin. Recently, non-radioactive assays, such as the ELISA method (enzyme linked immunosorbent assay), have been developed.<sup>23, 24</sup> Both the RIA<sup>21, 25</sup> and ELISA methods for detecting ciguatoxin are for testing fish tissues; no proven laboratory assays are presently available for testing human tissue or fluid specimens.

At present, the diagnosis of human ciguatera fish poisoning is largely clinical, with indirect confirmation, on a delayed basis, by the RIA of incriminated fish tissues. When a ciguateric fish is consumed, more than 150 clinical manifestations are possible. The most common manifestations<sup>6, 9, 12, 13, 16, 17, 26, 28, 33-40, 45-47</sup> are nausea, vomiting, diarrhea, oropharyngeal paresthesias, acral paresthesias, extremity paresthesias, generalized paresthesias, itching, weakness, malaise, myalgias, and the temperature sensation reversal phenomenon (i.e., hot things feel cold, and cold things feel hot, like dry ice or an electric shock; *N.B.*, the temperature sensation reversal phenomenon does not usually develop until 2-5 days post-ingestion).<sup>26, 27</sup>

The development of the temperature sensation reversal phenomenon usually serves to confirm a presumptive clinical diagnosis of ciguatera fish poisoning unless there is evidence of neurotoxic shellfish poisoning<sup>28</sup> (possibly caulerpa algal poisoning)<sup>29</sup> or turban shell poisoning.<sup>30, 31</sup> The former should be ruled out due to the absence of *Ptychodiscus breve* outbreaks involving Hawaii's fish and the latter excludable through the dietary history.

Cases of human ciguatera fish poisoning in the United States have been diagnosed in Hawaii,<sup>9, 11-14, 26, 28, 32-34</sup> Florida,<sup>9, 16, 28, 32, 34-37</sup> Texas,<sup>34, 38</sup> Louisiana,<sup>34</sup> Washington, D.C.,<sup>34</sup> New York<sup>34, 39</sup> Massachusetts<sup>34</sup> and Maryland.<sup>40</sup> Disease in these areas resulted from the consumption of fishes caught in endemic areas and, in some cases, brought into a non-endemic area.

In the current report, the epidemiology of ciguatera fish poisoning in Hawaii is described, based on 81 outbreaks (203 cases) from 1975 through 1981, resulting from fish caught in Hawaii's waters.

From the State of Hawaii Department of Health.

† State Epidemiologist, (deceased) Communicable Disease Division, State of Hawaii Department of Health.

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# Human Fish Poisoning in Hawaii, 1900-1974

Little is known about human ciguatera fish poisoning in Hawaii prior to 1900. From 1900 through 1974 (a 75-year period), a total of 59 outbreaks of ciguatera poisoning, involving 450 cases, were reported to the State of Hawaii Department of Health.<sup>41</sup> From 1900 until 1975, most outbreaks of illness attributed to ciguatera were from fish brought to the inhabited islands of Hawaii from other areas of the Pacific where ciguatera was endemic (e.g., Midway, Johnston Island, et al.).<sup>26, 41</sup> Undoubtedly, these numbers grossly underestimate the actual number of ciguatera poisoning incidents in Hawaii, since the numbers reflect only those cases reported to proper health authorities.

Two deaths attributed to ciguatera fish poisoning occurred in Hawaii between 1900 and 1974.<sup>33, 41</sup> These involved adult males who died approximately 21 hours and 31 hours after ingestion of reef fish at a Labor Day picnic, September 7, 1964, at Haleiwa Beach Park, Oahu. The incriminated meat included an "uhu" (a parrotfish), "palani" (*Acanthurus dussumieri*), "puala" (*Acanthurus xanopterus* or *A. mata*), and a "kala" (*Naso unicornis*), caught that morning near the park. The entire fish, uneviscerated, was broiled. Of the 13 persons who ate fish, 10 were hospitalized,<sup>41</sup> 8 were clinically ill (62% of those exposed),<sup>33, 41, 42</sup> and 2 died (15% of those exposed, or 25% of those clinically ill).<sup>33, 41, 42</sup> These two deaths were the only confirmed deaths resulting from ciguatera poisoning between 1900 and 1974. Thus, the case fatality rate was only 0.44% for this 75-year period.

## Materials and Methods

Since 1975, all outbreaks of ciguatera poisoning in Hawaii reported to the State Department of Health were followed by a personal visit or telephone interview with the patient(s), the attending physician, or both. Records of ciguatera outbreaks from 1975 to 1979 were reviewed retrospectively; more complete information was obtained prospectively on outbreaks from 1980 to 1981.

Two standardized questionnaire forms were used to gather information: One was used to record detailed epidemiologic information regarding the outbreak (e.g., date of outbreak, place of outbreak, name(s) of fish implicated, number of persons ill, number of persons exposed, number of persons hospitalized, number who expired, and other data); another form was used to obtain specific information about the individual cases involved (e.g., patient name, age, sex, time fish was consumed, time of onset of symptoms, incubation period, part of fish eaten, clinical manifestations, and type of

Continued on page 328

TABLE 1. Fish from Hawaiian waters implicated in ciguatera outbreaks in Hawaii, 1975-1981

Hawaiian Name	Common Name	Scientific Name	No. of Outbreaks	Percent of Total
Papio or Ulua	Jack	Carangidae (25 species)	20	24.7
Kahala	Amberjack	<i>Seriola dumerili</i>	17	21.0
Po'ou	Wrasse	<i>Cheilinus rhodochrous</i>	10	12.4
Weke	Goat Fish	<i>Mulloidichthys samoensis</i> (4) <i>Parupeneus multifasciatus</i> (1)	5	6.2
Kumu	Red Goat Fish	<i>Parupeneus porphyreus</i>	4	4.9
Uhu	Parrot Fish	Scaridae	3	3.7
Amaama	Mullet	<i>Mugil cephalus</i>	2	2.5
Hapuupuu	Sea Bass (Grouper)	<i>Epinephelus quernus</i>	2	2.5
Palani	Surgeon Fish	<i>Acanthurus dussumieri</i>	2	2.5
Puhi	Eel	Muraenidae (many species)	2	2.5
Puhi (Tohe)	White Eel	<i>Conger cinereus</i>	2	2.5
Uku	Blue-green Snapper	<i>Aprión virescens</i>	2	2.5
Aholehole	Flag-tail Fish			
	Mountain Bass	<i>Kuhlia sandvicensis</i>	1	1.2
Hanui	Parrot Fish	Scaridae	1	1.2
Kole	Surgeon Fish	<i>Ctenochaetus strigosus</i>	1	1.2
Maiii	Surgeon Fish	Acanthuridae	1	1.2
Mu	Porgy	<i>Monotaxis grandoculis</i>	1	1.2
	Small-scaled Snapper			
Opakapaka	Pink Snapper	<i>Pristipomoides microlepis</i>	1	1.2
Unknown			4	4.9
TOTAL			81	100.0

TABLE 2. Part(s) of fish eaten prior to becoming ill

Part	No. Cases	Percent
Meat (skeletal muscle) only	139	68.5
Meat and head only	30	14.8
Meat, head, and gonads	12	5.9
Head only	4	2.0
Liver only	4	2.0
Whole fish (uneviscerated)	1	0.5
Unknown	13	6.4
TOTAL	203	100.1%*

\*Figures total more than 100% due to rounding error.

TABLE 3. Ciguatera fish poisoning cases in Hawaii by age and sex, 1975-1981

Age Group (Years)	Number of cases (Incidence* per 100,000 Pop.)		
	Male	Female	Total
0 - 9	13 (2.4)	8 (1.6)	21 (2.0)
10 - 19	8 (1.4)	10 (1.8)	18 (1.6)
20 - 29	8 (1.1)	12 (1.8)	20 (1.4)
30 - 39	15 (2.8)	13 (2.6)	28 (2.7)
40 - 49	15 (4.7)	18 (5.4)	33 (5.1)
50 - 59	7 (2.1)	13 (3.7)	20 (2.9)
> 59	17 (4.2)	8 (2.0)	25 (3.1)
SUBTOTAL	83 (2.4)	82 (2.5)	165 (2.4)
Age and sex unknown			38
TOTAL			203 (3.0)

\*Incidence rates are average annual rate for the seven-year period based on the 1980 U.S. Census Report.



medical attention sought). This information was coded and punched onto computer cards. Tabulations and analyses were performed using the Statistical Analyses System (SAS) computer program on an IBM 370 computer at the State of Hawaii Computer Center.

A case was included if that person had a history of ingesting a marine fish caught in Hawaiian waters within 36 hours prior to the onset of illness,<sup>35</sup> and if the signs and symptoms of the illness were suggestive of ciguatera poisoning.<sup>6, 12, 13, 17, 26, 33, 34, 43-45</sup>

Cases of ciguatera which developed outside of Hawaii and brought to Hawaii for medical attention were not included (at least one such outbreak occurred on Midway Island in August 1980 involving 13 people who ate a toxic kahala (*Seriola dumerili*), caught off Midway).

Of 81 outbreaks reported to the health department during the study period, 40 (49.4%) were reported by the attending physician, 32 (39.5%) by a person who was ill, and 9 (11.1%) by other sources (e.g., Hawaii Poison Center). Regardless of the reporting source, attempts were made to speak personally to at least one of the persons involved in each outbreak. The majority of cases which occurred prior to 1980 were incomplete with regard to clinical symptoms; however, those clinical manifestations that were reported were highly suggestive of ciguatera poisoning.

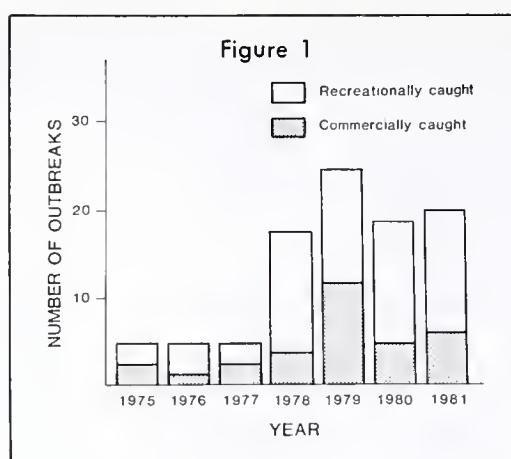
The identification of fish implicated in ciguatera outbreaks was facilitated by ichthyologists at the Bernice Pauahi Bishop Museum in Honolulu when possible. In situations where the entire fish had been consumed or an adequate sample was not available for identification, a common or Hawaiian name could usually be agreed upon by those who saw the fish before it was consumed.

If a portion of the implicated fish could be recovered, it was tested for the presence of ciguatoxin, using the radioimmunoassay (RIA) for ciguatoxin.<sup>21</sup> The results of this testing procedure were used to support a diagnosis based on clinical findings. Of the implicated fish, 35.8 percent (29/81) were tested; of these, 55.2 percent (16/29) were considered to be toxic using the RIA procedure, 20.7 percent (6/29) were borderline, and 24.1 percent (7/29) were negative by RIA.

## Results

**Distribution by time and place.** A total of 81 outbreaks of ciguatera poisoning involving 203 people were reported to the State of Hawaii Department of Health from 1975 through 1981. A dramatic increase in the number of reported outbreaks occurred in 1978 (from 4 in 1977 to 15 in 1978) and since then has remained relatively constant (Fig. 1).

When outbreaks are compiled by



month of onset (Fig. 2), the greatest number of outbreaks occurred in July. However, there is no apparent seasonal variation in the number of outbreaks, as has been noted elsewhere (e.g., Dade County, Florida).<sup>35</sup> The year may be divided into two largely undifferentiated seasons in Hawaii, the cooler "rainy season" (Octo-

ber-March) and the slightly warmer "dry season" (April-September). When outbreaks are grouped into these vague and overlapping seasons, there is no statistically significant difference ( $P > .05$ ) in the proportion of cases by season (35 outbreaks during the rainy season and 46 during the dry season). The lag time required for fish to accumulate and store ciguatoxin, possibly 1.5-2 years (and perhaps as little as 10 months),<sup>44</sup> would prob-

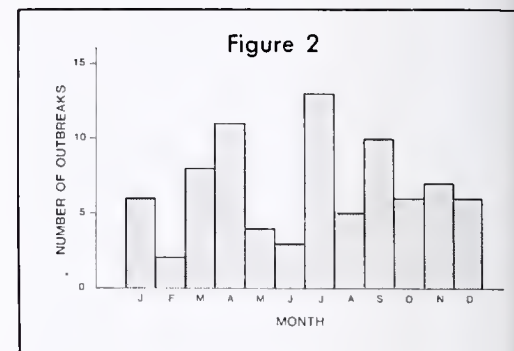


TABLE 4. Signs and symptoms reported in 203 cases of ciguatera poisoning in Hawaii (1975-1981), as compared to other areas

Sign or Symptom	% of Cases With Sign or Symptom (Hawaii)	Miami*	Fiji*	French Poly. New Caledonia-Pacific***
Weakness (asthenia) . . . . .	68.5	30.0		60.0
Diarrhea . . . . .	64.5	76.0		70.6
Myalgia . . . . .	63.5	86.0	32.1	81.5
Paresthesia of the extremities . . . . .	62.6	71.0	67.2	89.2
Circumoral paresthesia . . . . .	61.1	54.0		89.1
Burning or pain on contact w/cold water (temperature sensation reversal phenomenon) . . . . .	48.3		21.4	87.6
Nausea . . . . .	37.9		55.7	42.9
Vomiting . . . . .	36.5	68.0	42.7	37.5
Abdominal pain . . . . .	27.6		77.9	46.5
Chills . . . . .	23.6	24.0		59.0
Itching (pruritis) . . . . .	21.2	48.0	4.6	44.9
Dizziness, vertigo . . . . .	20.7			42.3
Sweating, perspiration . . . . .	15.3		14.5	36.7
Headache . . . . .	12.3	47.0		59.2
Taste disturbances (metallic taste or "fizzing" sensation, "carbonation") . . . . .	11.8		1.5	10.5
Arthralgia . . . . .	4.4			85.7
Photophobia . . . . .	3.9			
Watery eyes . . . . .	3.9			22.4
Skin rash . . . . .	3.4			20.5
Shortness of breath (dyspnea) . . . . .	2.0			16.1
Hallucinations . . . . .	1.0			
Loss of muscular coordination . . . . .	0.5			
Paresis . . . . .				10.5
Salivation . . . . .				18.7
Dysuria . . . . .				18.7
Neck stiffness . . . . .				24.2
Odontalgia (dental pain, tooth pain) . . . . .				24.8
Tremor . . . . .				26.8
Ataxia . . . . .				37.7
Giddiness . . . . .			11.5	
Other signs reported by physicians include:				
Bradycardia: 4 cases . . . . .	2.0%		9.2	
Hypotension: 3 cases . . . . .	1.5%		9.2	
Tachycardia: 2 cases . . . . .	1.0%		7.6	
Hyporeflexia . . . . .			6.9	
Dilated pupils . . . . .			1.5	
Hyperreflexia . . . . .			0.8	

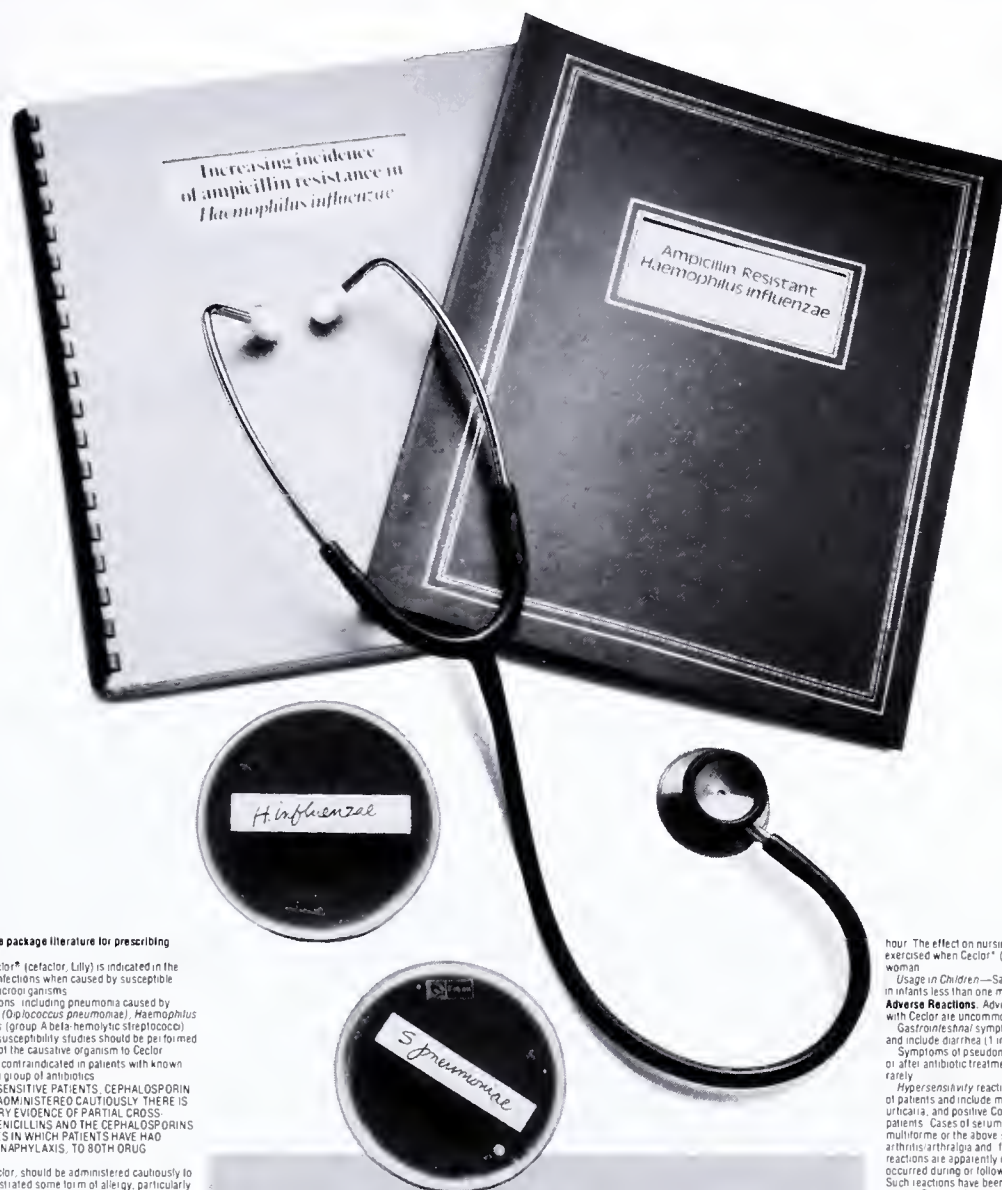
\*Lawrence et al., 1980

\*\*Northwest Viti Levu, Fiji Islands (Sorokin, 1975)

\*\*\*Bagnis et al., 1979

Continued on page 330

# An added complication... in the treatment of bacterial bronchitis\*



## Brief Summary Consult the package literature for prescribing information

**Indications and Usage** Cefaclor\* (cefaclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococcus).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefaclor.

**Contraindication** Cefaclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY. THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefaclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics including macrolides, semisynthetic penicillins, and cephalosporins; therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions** **General Precautions**—If an allergic reaction to Cefaclor occurs, the drug should be discontinued and, if necessary, the patient should be treated with appropriate agents (e.g., pressor amines, antihistamines, or corticosteroids).

Prolonged use of Cefaclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

**Positive Direct Coombs' Tests** have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefaclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefaclor, a false positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinette\* tablets but not with Tes-Tape\* (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy**—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefaclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers**—Small amounts of Cefaclor have been detected in mother's milk following administration of single 500 mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

## Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefaclor.<sup>1-6</sup>

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefaclor.<sup>7</sup>

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hour. The effect on nursing infants is not known. Caution should be exercised when Cefaclor\* (cefaclor, Lilly) is administered to a nursing woman.

**Usage in Children**—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions** Adverse effects considered related to therapy with Cefaclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

**Hypersensitivity reactions** have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100). Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthritis/arthritis and frequently fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of the drug with Cefaclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Aminoglycosides and corticosteroids appear to enhance resolution of the syndrome. Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to the therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain**—Transient abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic**—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematologic**—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal**—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

(061782R)

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

**Note** Cefaclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Cefaclor is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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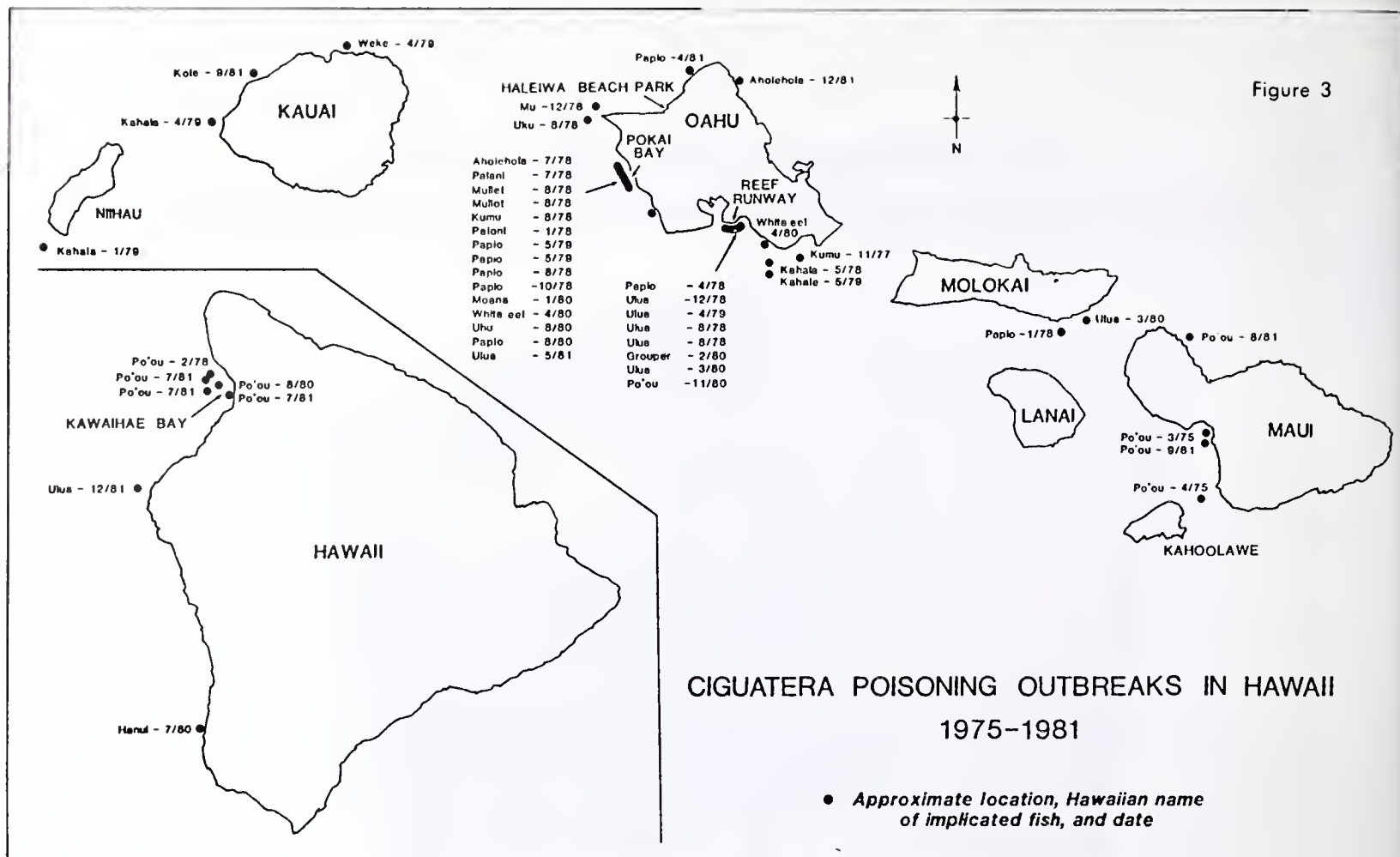
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## Ciguatera

Continued from page 328

ably mask any seasonal variation, even if it existed.

The approximate locations where fish thought to be responsible for ciguatera outbreaks in Hawaii were caught are noted in Fig. 3. In 58% of the outbreaks it was not possible to trace the origin of the fish implicated, especially those fish which were purchased through commercial markets. Therefore, only locations were plotted which could be determined with a reasonable degree of accuracy by information obtained from fishermen who caught the fish.

The prevailing "trade winds" in Hawaii come from a northeasterly direction. The majority of fish implicated were generally, but not always, caught on the leeward coasts of the major Hawaiian Islands. These areas are drier than the windward coasts, but are subject to extensive offshore siltage following heavy rains. The distribution of outbreaks is not generally proportional to the intensity of fishing activity in a given area.

During the study period, of the total of 81 outbreaks, 62 (76.5%) occurred on Oahu (where 79.1% of the population of Hawaii lives), 6 (7.4%) on the Island of Hawaii, 5 (6.2%) on Maui, 5 (6.2%) on Kauai, and 3 (3.7%) on Molokai. A clustering of outbreaks occurred in the vicinity of Pokai Bay and the Reef Runway on Oahu, and in Kawaihae Bay on the Island of Hawaii.

**Fish implicated.** The names of the fish presumed to be toxic and responsible for the 81 outbreaks during the study period

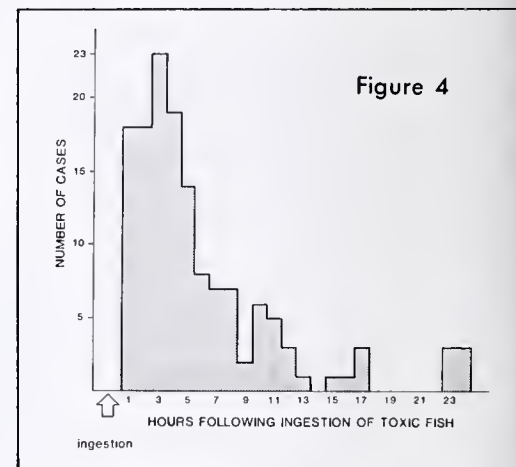
are noted in Table 1. Papio or ulua (both Hawaiian names for 25 species of fish in the *Carangidae* family differentiated only by size; i.e., a papio is a small ulua) were associated with 20 (24.7%) of the outbreaks during the study period. Kahala (*Seriola dumerili*), previously most often associated with ciguatera poisoning in Hawaii, were the next most commonly implicated fish and accounted for 17 (21%) of the outbreaks reported.

The parts of fish consumed prior to the onset of symptoms are delineated in Table 2. The majority of victims (68.5%) ate only the skeletal muscle of the fish. All fish were described as being apparently normal by appearance, smell, and taste. Although 6 fish (7.4%) were eaten as "sashimi" (raw or uncooked), most were fried, baked, or broiled.

**Distribution by person.** No difference in susceptibility to ciguatera poisoning by age or sex was noted (Table 3). The ages of the victims ranged from 1 to 81 years, with a mean age of 36.4 years. The highest average annual incidence of ciguatera in Hawaii during the study period occurred in the 40- to 49-year-old age group (Table 3); however, when this group is compared to other age groups, the difference is not statistically significant by chi-square analysis ( $P > 0.05$ ). The incidence is only slightly lower among males (2.4:100,000) than among females (2.5:100,000).

The latency period—the time between first ingesting a toxic fish and the onset of the first symptoms of poisoning—varied from 1 to 24 hours, median 4 hours (Fig. 4). The duration of illness was difficult to

determine, as symptoms attributable to a single exposure may persist for months or years. Although at least 12 persons were hospitalized for 1 day or more, no deaths due to ciguatera poisoning occurred from 1975-1981.



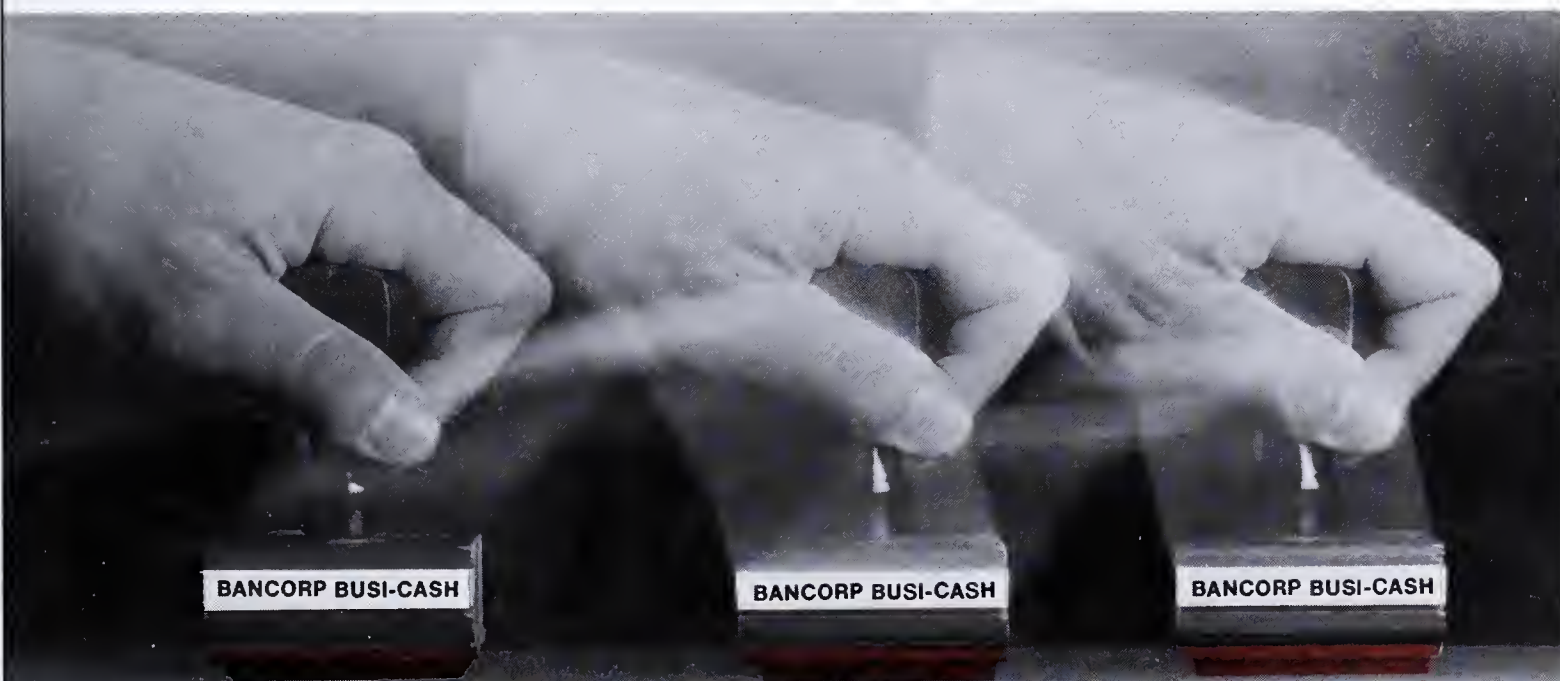
**Clinical manifestations.** The spectrum of clinical manifestations is outlined in Table 4. Comparing the spectrum of clinical manifestations found in Hawaii to those reported in Miami, Fiji, and French Polynesia, it may be noted that a greater proportion of more severe manifestations were observed in French Polynesia and fewer were reported in Fiji. Hawaii cases had fewer cardiovascular signs (e.g., bradycardia, hypotension) than cases in Fiji. Hawaii cases exhibited the temperature sensation reversal phenomenon slightly less than 50% of the time (cf. 88% of the time in French Polynesia), although incomplete reporting of this symptom is likely.

Continued on page 332

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## Discussion

Human ciguatera fish poisoning is endemic to Hawaii, as evidenced by the occurrence of human illness characterized by the signs and symptoms of ciguatera,<sup>6, 9, 12, 13, 16, 17, 26, 28, 33-40, 45-47</sup> including the classical temperature sensation reversal phenomenon, following the consumption of fish caught in the waters surrounding the Hawaiian Islands. From 1975 through 1981, 203 cases of human ciguatera were reported to the State of Hawaii Department of Health, giving an average of 33.8 reported cases per annum for the period and an average annual incidence of 3 cases/100,000 population. Underreporting in magnitudes estimated to be as large as 100-fold have been reported from other endemic areas.<sup>35</sup> More accurate incidence rates might be obtained by a house-to-house survey. Therefore, it is surmised herein that these numbers may at best represent only 10% of the actual number of cases occurring in Hawaii.

The clinical manifestations of ciguatera in Hawaii during 1975-1981 reveal the diverse spectrum of the manifestations of the syndrome. The temperature sensation reversal phenomenon, a pathognomonic symptom, was present in 48% of the reported cases. In these cases and in the others, the obtaining of a positive history of the consumption of a possibly ciguateric fish was of paramount importance in making a tentative diagnosis of ciguatera fish poisoning. Obtaining leftover portions of fish from the toxic meal for analysis for ciguatera toxins (e.g., RIA for ciguatoxin) permitted a diagnosis of ciguatera to be established or confirmed in a number of instances. The diversity and intensity of the clinical manifestations of human ciguatera fish poisoning are, hypothetically,<sup>5, 6</sup> the result of a poisoning wherein a multiplicity of toxins, each in varying concentrations, are ingested by individuals with variable toxin sensitivities and immunological status. These factors, and the possibility of other toxins from organisms besides *G. toxicus*,<sup>9</sup> may explain the variations in the spectrum and frequency of the clinical manifestations of human ciguatera fish poisoning from place-to-place worldwide (cf. Table 4).

In this study, species of fish emerged which have not been previously described<sup>22, 48</sup> as being ciguateric: *Parupeneus multifasciatus*, *Mugil cephalus*, *Epinephelus quernus*, *Kuhlia sandvicensis*, *Menotaxis grandoculis*, and *Pritopomoides microlepis*. No dolphinfish (Hawaiian mahi mahi), tuna (Hawaiian ahi, aku), or marlin/swordfish/sailfish (Hawaiian a'u) were involved in ciguatera fish poisonings in Hawaii for the 1975-1981 study period.

Kahala (*Seriola dumerili*) have been extensively surveyed for ciguatera toxins because of the history of human illness in Hawaii associated with this fish. In May

1979 as many as 23% were ciguateric<sup>49</sup> by RIA for ciguatoxin.<sup>21</sup> The implementation of pre-market screening survey of all kahala sold through Hawaiian wholesale fish markets by the fishing industry from April 1979 to May 1981 may partially explain the decrease in the number of outbreaks of ciguatera in 1980 (i.e., toxic fish were not marketed). None of the kahala that were screened and later released for consumption caused illness. From the public health standpoint, this survey may point to the effectiveness of screening suspect fishes prior to their distribution as a means of preventing human illness due to ciguatera. A program for screening fish caught recreationally and not sold through commercial markets is indicated; they account for the majority of outbreaks occurring in Hawaii.

The *sine qua non* for ciguatera fish poisoning is the presence of toxic *G. toxicus* Adachi and Fukuyo. Since ciguatoxin production by organisms other than *G. toxicus* has not been demonstrated, it may be that outbreaks of endemic ciguatera do not occur except when *G. toxicus* is present. This and other factors<sup>8, 13, 17</sup> may explain, in part, how endemic ciguatera outbreaks occur in one area and not in another. Factors which disrupt the benthic environment, including natural disasters such as tsunamis or severe storms, and marine construction projects may be associated with subsequent outbreaks of ciguatera.<sup>13, 17</sup> Disruption of the marine environment in itself, however, is not sufficient to cause an outbreak; rather it is hypothesized herein, subject to the aforementioned conditions, that for an outbreak of ciguatera to occur, the toxic *G. toxicus* must be present before or during the disruption and be capable of proliferating to the extent of providing clinically significant amounts of the ciguatera toxins to the food chain of ciguateric fish. A lag time, the time for disruption of the marine environment until an outbreak of ciguatera, was determined to be 1.5-2 years in an outbreak in the Hao atoll of the Tuamotus.<sup>13, 50</sup> Part of this lag would appear to be associated with the proliferation of toxic *G. toxicus* (into a "bloom") and part with the food chain passage of ciguatera toxins.

A temporal association between two major offshore construction projects in Hawaii on Oahu and reports of ciguatera poisoning has been suggested, and was reviewed (see Fig. 3). The first project was the construction of the reef runway at Honolulu International Airport. Construction lasted about 5 years, from May 1973 to December 1977, and involved blasting, dredging, and creating an artificial surface of coral debris upon which the runway was built. The first toxic fish (records were reviewed as far back as 1960) were reported in April 1978, 4 months after construction ceased, and the last (to date) in November 1980. The second offshore project was the construction

of a break water to protect the small-boat harbor at Pokai Bay on the Waianae Coast. Construction on this project began in April 1977 and ended in January 1979 and again involved blasting, dredging, and filling. Reports of toxic fish being caught in the area began in July 1978 (15 months after construction began), and continue to date. Prior to 1975, only 1 other fish (an ulua in April 1965) was reported to be possibly toxic from the same area. The lag time of outbreaks in these two areas is difficult to determine accurately and could vary between 0 and 5 years. The matter is also complicated by the construction of the Waianae flood control spillway in the vicinity of the Waianae Coast Comprehensive Health Center, as well as rainfall. The food chain passage theory is also evident in these areas, as the herbivorous fish (aholehole, palani, and kumu) were the first to become toxic, followed by the carnivorous fish (papio and ulua). Unfortunately, no preceding or concurrent studies of *G. toxicus* growth were attempted in these areas to permit a definitive implication of any of the construction projects as the source of the outbreaks.

From the standpoint of preventing or controlling outbreaks of ciguatera fish poisoning, attention needs to be focused on the following:

- Extensive surveillance of ciguatera poisoning cases.
- Education of fishermen with regard to the dangers of ciguatera poisoning.
- Development of a practical screening test to detect toxic fish.

## LEGENDS FOR ILLUSTRATIONS

- Figure 1. Ciguatera fish poisoning outbreaks in Hawaii, 1975-1981. Commercially caught fish implicated in outbreaks were purchased through a market or directly from fishermen.
- Figure 2. Ciguatera outbreaks in Hawaii, 1975-1981, compiled by month of occurrence.
- Figure 3. A spot map showing the approximate locations where fish implicated in ciguatera outbreaks in Hawaii were caught.
- Figure 4. Distribution of latency periods, hours between the time a fish was consumed and the onset of the first symptom(s) of ciguatera poisoning, in 142 cases in Hawaii, 1975-1981.

## ACKNOWLEDGMENTS

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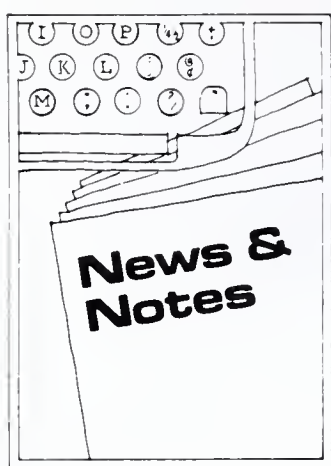
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Henry Yokoyama, M.D.

## Life in These Parts . . .

A tourist from Japan was treated for a minor sprained thumb . . . A few months later, we received a 2-page insurance form (Nara Prefecture Social Insurance Association) which required an itemized report and added: "Important: Exclude the cost irrelevant to the treatment, e.g. payment for a luxurious examining room."

Rabbi Emeritus Julius Nodel introduced "Tattoo Guru" **Norman Goldstein** and his slide presentation at the weekly meeting of the staid Honolulu Rotary Club with the following limerick: "There was a young girl named Eileen . . . Who had pictures all over her skeep . . . Which she never exhibited . . . 'Cause she was inhibited . . . By the research of Dr Goldskin-er-stein." Norman blushed and confessed that he had planned a little racier slide presentation, "but I blush very easily." Nevertheless our favorite medical writer, Pat Hunter, aptly described some of the slides . . . "belly dancers placed where underlying muscles could ripple their contours, animal faces with breast nipples for noses; navels surrounded by such things as a pair of lips; an appendectomy scar with the legend 'opened by mistake' and dainty butterflies, strawberries and even a pakalolo leaf situated beyond the bikini line, where only the owners' intimates could view them readily."

The U.S.-Japan Cooperative Cancer Research Program met in Honolulu for a seminar coordinated by **Thomas Hall** of the Cancer Center of Hawaii. Bruce Chabner, director of the National Cancer Institute's division of cancer treatment, reported that resistance to anti-cancer drugs is being studied by scientists of both countries. Chabner said that cells apparently become resistant through one single type of genetic mutation to certain drugs, especially anti-cancer drugs that come from plants or fungi, such as Vincristine, Adriamycin, and Actinomycin, but not to synthetically produced drugs . . . The scientists are discussing new ideas about using other drugs (e.g. Verapamil) in combination with anti-cancer agents, to promote cell entry of the agents into the offending cells and block the cells' resistance . . ."

High gross award at the Tosh Kane-shiro Memorial Golf Tourney at the HICC was a complete physical exam from the Industrial Medical Clinic. **David Eith** figured whoever came in last could use a physical . . . (From Dave Donnelly's Hawaii)

Senate Bill 178 (Act 22) empowers the state Board of Medical Examiners to discipline doctors for violations of HMA or AMA ethics standards or narcotics laws. (Signed into law May 4, 1983).

**Claude Caver** was furious. In a letter to the editor he wrote, . . . "Despite 30 years of effort to educate the public against the opprobrious and despicable . . . word, 'leper', there are still some journalists who remain so abysmally ignorant and so crassly insensitive to human feelings that they continue to employ this term . . ." Claude was referring to Advertiser staff writer Robert Hollis, who referred to Kalaupapa as a "former leper station" . . . Reporter Hollis apologized in print: "Dr Caver is correct. It was a serious lapse of judgment on my part to use the word. I apologize to Hansen's disease patients in Kalaupapa and elsewhere in Hawaii."

*Back pain? Take two papaya leaves . . .* The Hawaii *Tribune Herald* was referring to **Rowlin Lichter's** report on injecting chymopapain to dissolve "slipped discs." (Smith Laboratories, Inc., markets Chymodiactin from papayas grown in Zaire, Africa, not Hawaii, and costing between \$500 and \$600 per vial of powder.)

## Close Encounters of the Worst Kind . . .

It was a pleasant Sunday morning and our first chance to see our newborn granddaughter . . . We stopped at the QMC front desk for information . . . "Joanne Suzuki's room number, please," we asked pleasantly of an elderly battleax who painstakingly jabbed at the computer keys . . . "Joanne Suzuki? She just had a baby." "Yes, I know . . ." "Are you a relative?" "Yes, I'm her father." The Victorian matriarch stared up at us in disbelief . . . "You are the baby's father?" She scrutinized our greying temples and thinning pate . . . We were forced into a defensive position and stammered, "No . . . No . . . I'm the mother's father . . ." "Well, you can't see her." (We had not known that grandfathers were not relatives . . .) Curbing our mounting frustration, we declared in gentle tones, "That's OK . . . I'm also a physician . . . Just give me her room number, please!!!" How dare we question her authority . . . She raised her pinpoint nose and stared hostilely, because we were circumventing the ground rules . . . "Room 314," she spat out the information and turned away . . . As we rounded the corner toward the elevators, we heard a gruff "Harrrumph!!!" as she got in her last lick . . .

## Sportsmen . . .

The DJs (Docs and Jocks) are the former "Physician All Stars," renamed because there were too few all stars (as a matter of fact, none at all). The all-physician team plays in the inter-hospital 14-inch slow-pitch league and is cajoled, managed, and coached by **Mike "Steinbrenner" Okihiro**, who is ably assisted by **George "Geritol" Kimata** and "Wild Bill" **Morioka** . . . The pitchers are "Wild Bill" and **Jim "Bones" Oda** . . . The catching staff includes **Owen Kaneshiro** and **Mike Dimitrion**. Infielders are **Tom Ito**, "Cat" **Cataleno**, **Eliot Tomomitsu**, "Speedy" **Jim Hirasaka**, **Roy Adaniya**, **Lance Kagihara** and **Mike Ishioka**. Outfielders are **Don Nikaitani**, **Al "Home Run" Furuike**, **Roland Tam**, **Dennis Murakami**, and **Mike Uechi**. The DJs floundered during the first half of this season, but later mustered a 2-game winning streak against the X-ray Rascals and the Lab Royals . . . "Steinbrenner" Okihiro is calling for potential physician candidates to try out at their next rookie camp . . . The team can use a physiatrist, an ophthalmologist and perhaps even a psychiatrist . . . (Mike Okihiro reporting)

## Rural Medicine in Changing Times . . .

"It is good to return to Hawaii, to Queen's, esp to the Larry French Memorial Lectureship," said **Norma Sneed**, M.D., of Checotah, Okla., at the Queen's alumni reunion at the Kuilima. "I am looking forward to tonight, especially to our mahimahi—prime rib banquet . . . Since I left Queen's, I captured a husband and for our first meal I cooked him salmon patties and an omelette. Do you know what he said? 'What is which!'"

"Charlie Odom gave us a good paper reporting his 'firsts' and I want to report to you that this is one of my 'firsts.' I have never given a scientific paper in Hawaii before. It reminds me of the time at Old Settlers Day in Checotah, when they were having contests. They called for entries in the Hawg Callin' contest, and my sister entered. I said, 'Anna, you've never called hogs in your life. What are you going to do?' She replied, 'I'm number 36 and by the time they are ready for me I will know how.' And would you believe that it started pouring down rain. There was no one there to hear her. Now I'm ready for my paper. Madam Pele, where are you?"

"Why am I here? Perhaps it's reminiscence or perhaps it's Alzheimer's. After I left Queen's, I stopped off for some pediatrics and ended up back in my home town . . . 1¼ blocks west of the only stoplight, a town of 2,500 people. The office was 20 by 25 feet. I had two examining rooms, a microscope, and an X-ray machine. The town was beginning to

*Continued on page 338*



# PHYSICIANS



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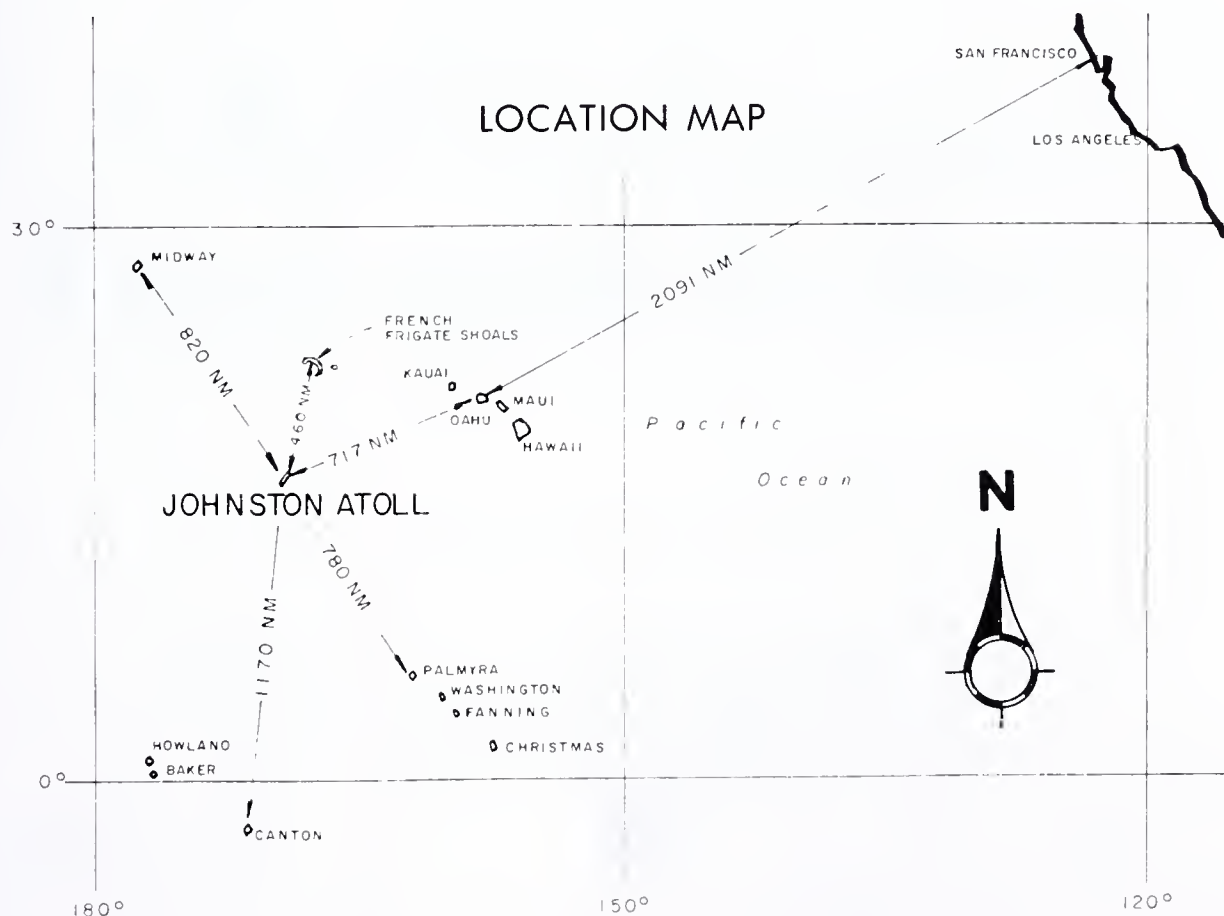
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change. We could still buy beans and rice, measured out into paper bags. They had candy in wooden boxes with cheesecloth over the fronts.

"We did house calls in those days, 20 years ago. There was a call to come see a 93-year-old woman who was 'all swole up'. I immediately thought of congestive heart failure, as Dr Morton Berk had taught me that on my very first rotation at Queen's in 1960. The patient could not come in to see me because the stream was up and she could not get in. I took rotating tourniquets, digitalis, and mercurhydriin and started out. After crossing

the stream and driving 1.4 miles, I found a sweet little old lady whose feet were swollen from dependent edema. She needed a laxative. From then on I've carried a laxative in the little black bag.

#### Rural OB

"OB was interesting in those days. I went from 'the womb,' where only those on our service could put on forceps, to the rural area where the women with minimum education were fading out of the delivery picture. Dr Sakimoto was the chief at Queen's and we really toed the mark. I was called for a home delivery. 'I don't do them, bring her to the hospital.' The reply was, 'She ain't got no hus-

band.' I asked to have a neighbor with a car bring her. It so happened that the neighbor 'did not have no car.' It became apparent that I had to go down and assess the situation. The family and neighbors had saved newspapers and drycleaning plastic and were ready for me. We put the children in the other room and, after all was finished, I looked over my shoulder to see a half-cracked door and three little black heads in step ladder fashion looking on the happenings.

"The hospital was 22 miles away; we would go to the grass air strip and climb into a Cessna 182 to fly to Muskogee to make rounds. We landed next to the hospital and could be there in 12 minutes. On the return trip, we would have to land just right or we would end up in the kitchen. One evening, returning after sundown, there was a real shock when the automatic timer had not worked and there were no runway lights on the landing strip. After circling the town a time or two, one of the patients realized 'Doc must be in trouble.' He ran out to check the runway and found that a snake had crawled across the circuit breaker and messed up the routine. It was quickly remedied.

#### Hot Tar Burn

"Time marches on . . . The four-lane highways were being finished and there were construction workers being injured. One man burned his arm with hot tar and did what all good burn victims do . . . he submerged it in cold water. He refused to go to the burn center, 70 miles away, so we began treatment. This paper has to be scientific so I'll pass on some good information. For boiling tar burns, you cover with grease daily and in a few days there is nice pink skin under the thick black sterilized molten tar mass. Initially it is caked solid and is impenetrable.

"After 5 years, I had some real obstetrical excitement. It was close to closing time on Saturday. The walls were still lined with people. A tall lanky sailor came in with his wife. She was expecting a baby and had never had one before. She didn't know how you were supposed to feel. They were just passing through and she wanted to be checked. After a rush exam I saw that there was no time to make it to the hospital. I called my girl to help; she had never been in on a delivery, except her own. I put the sailor to work boiling water, as that is what you are supposed to have the father do. There immediately went up a cry . . . the baby was here! The reception room crowd cheered through our paper-thin walls. But, then we learned there was a second baby. I knew just what to do because I had helped Dr Sinclair deliver triplets at Queen's 5 years prior to that time, in 1961, or was it 1962? We could not send the mama and babies to the hospital because they were contaminated and

Continued on page 340

## DOCTORS

**Q. Why is it that Hospitals have such HIGH cleaning standards?**

**A. They know the health hazards of cross infection or contamination that threaten many health areas and the benefits of a germ-free environment for patients, staff and visitors protection.**

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Member of Hospital Association of Hawaii

**From what our HMSA members tell us, more doctors seem to be perfecting that old fashioned 'bedside manner.'**

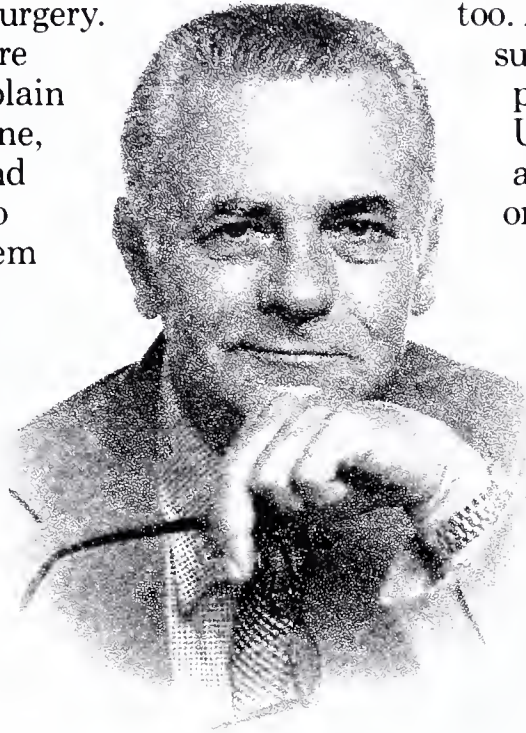
To the patient, every illness is serious, especially surgery. Today more doctors are taking the time to explain what is going to be done, why it's being done and how much it's going to cost. Patients, too, seem to be more concerned and willing to talk

about these important matters.

We think these are both healthy signs. We can all do our part to promote this kind of helpful dialogue.

We'd like to hear from you, too. Anytime you have a suggestion or question, please let us know. Usually we can have an answer for you in a minute or two.

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# Old Fashioned Dialogue is Back.

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couldn't go into the newborn nursery. We cared for them, with my receptionist taking them home until the Navy could come in for a rescue. The banker's wife sent over a pot of stew for the mother. The plumber's wife sent diapers, as Pampers weren't that popular yet. This convinced me that the office was not adequate. We built a lovely two-story building with 7 exam rooms, EKG, X-ray, lab, and minor surgery. This occupied one floor of the 40 by 75 foot building.

"Time marches on and it was now 10 years later, in 1973. It is a good thing that our specialist, Charlie Odom, is not here because he would laugh. They needed a coroner in our area so I was asked to become a medical examiner. They mailed me the forensic magazine and I got a license plate for the car, stating that it was a medical examiner's vehicle, and I was in business. There were some adventures. If the man shoots his wife and you are on E.R. and see her anyway, then you might as well be coroner too. We had a shoot-out and the sheriff got the man as they were exchanging gunfire from behind the trees. There was excitement in those days, and the coroner was there.

#### New Hospital

"In 1976, we decided we needed a hospital in our area. The lake was finished and the Tulsa and Oklahoma City citizens were coming into eastern Oklahoma for weekends. We had to be ready for them. We built a 33-bed hospital right on the edge of the beautiful lake. We were understaffed. One doctor came and stayed 18 months. Then after he had gone a while, another came for 12 months and left. Since about 1981, we have had 4 doctors and an active staff. We have a real concrete helicopter pad and 'Life Flight' comes down from Tulsa for a major problem. We have intensive care, with monitoring from Oklahoma City. Back in the old days with Dr Berk, we would put acute MIs to bed and anticoagulate them, and they either lived or died. Now we can even detect arrhythmias and treat.

#### Fishhook Specialists

"We are 'emergency room fishhook specialists.' One 4th of July, we had over 100 patients in one weekend, fishhooks, lacerations, skiing accidents, etc., etc. The administration is very sympathetic and now imports emergency room coverage for weekends during the summer months. That keeps us from wearing out in order that we can care for the regular patients. We still do E.R. coverage every fourth night. That is so much more of a relief than every night as it had been for months and months. We ship the high risk OB's to Tulsa, 70 miles away.

"Time marches on . . . People are asking more and more for sophisticated

medicine. We have developed the ground floor of the clinic into a coronary risk unit. I have a tremendous P.A. who works in this area. We can do the lower than high risk cardiac stress testing and echocardiography; and we have an excellent relationship with the cardiologist 70 miles away. We have computerized pulmonary function testing.

#### Fly-In Orthopedist

"We now have an orthopedic surgeon who flies in two mornings a week. An internist will come for consultation if we have 3 patients needing attention.

"House calls are returning to popularity. With federal cutbacks in nursing home spending, we are seeing more and more old timers remaining at home for care.

"The country store concept is fading. People are shopping for health care just like they do for Cheetos and potato chips. The pharmacists have blood pressure machines where you drop a quarter and get a reading. 'Oh, your pressure is down from 120 to 114.' They come into the office for a checkup to see why they have 'low blood pressure.' It is giving us more business. The territory is diminishing. We could call specialists in the past and they would see our patients in 3 weeks. Now they are seeing them either the next day or even the same day.

"We are looking at medicine more and more as an art. We are pushing love and concern. We even have a campaign in which we pass out buttons when we go into a restaurant. These are big yellow ones that say 'My Family Doctor Loves Me.' Everyone in town knows everyone else and it is a real loving caring tool.

"Time marches on . . . Maturity is creeping up on us. Things are changing. Do you know what maturity is? The skin is getting too big for us. We are getting a little rounder, and when we pull our tummy in, then our hemorrhoids pop out." (Norma Sneed MD is in family medicine at 414 West Gentry, Checotah OK. 74426. She is a fellow in the AAFP. Her husband states that he is the only man in town who can sleep with a fellow and not be talked about.)

#### Mea Culpa, Mea Maxima Culpa!

Over the past 2 years, our Notes & News column has suffered from the JOURNAL's editorial page shortage and has dwindled to 1 or 2 pages per issue . . . In an effort to correct the situation, we even accepted the chairmanship of the Publications Committee and with the help of committee members especially Jim Lumeng et al., we tried to increase the editorial page space by soliciting more ads and limiting space allotted to HMA Council minutes and CME material . . . To no avail . . . The situation did not im-

prove . . . The alternative, we thought, was to sacrifice this column (which has been under frequent fire for the ribald jokes, the anecdotes, and non-scientific news) . . . Then we received the following letter of encouragement from our perspicacious Editor.

"Dear Henry:

"The HMA Publications Committee at its meeting on May 11, 1983, voted unanimously to commend you formally, and to express its appreciation for the remarkable way in which, for 19 years, you have provided the HAWAII MEDICAL JOURNAL with 'News and Notes.'

"All medical journals contain scientific articles, minutes of meetings, book reviews, etc., but few, if any, can match HMJ's peripatetic and vibrant account of life within this society of physicians.

"We wonder how you are able to do it. We cannot conceive of anyone else being able to do it. We ask you please, Henry, not to let us down; pretty please, to continue, even *ad mortem*! You needn't even meet deadlines, just so long as you keep feeding the ravenous HMJ in your inimitable way!

Aloha from all of us  
Harry Arnold Jr., M.D.

Editor

HAWAII MEDICAL JOURNAL

P.S. This comes from the heart, Henry!  
Harry

#### Miscellany . . .

A patient was seeing the doctor for the first time and noted that the waiting room was expensively furnished with quality wall paper, elegant carpeting and lovely Scandinavian teak furniture . . . He casually asked another patient, "Doc must charge a lot . . ." "Yeah, he charges \$100 for the first visit and \$50 for the follow-up visits." When he stepped into the examining room, he remarked, "Hi Doc . . . Good to see you again . . ." (As told to MSD rep Claire Loo by pediatrician Kenneth Siu)

\* \* \*

Q. "What is E.T.'s pregnant sister's name?"

A. "E.Z. . . ." (As told to Claire Loo by OB Gyn man Montgomery Johns)

#### More Miscellany . . .

(As told by Claire Loo, our favorite MSD rep)

Q. "What happened to the man who lost his whole left side?"

A. "He was all right."

Q. "What are the three kinds of rings in marriage?"

A. "Engagement ring, wedding ring, and suffering . . ."

◇



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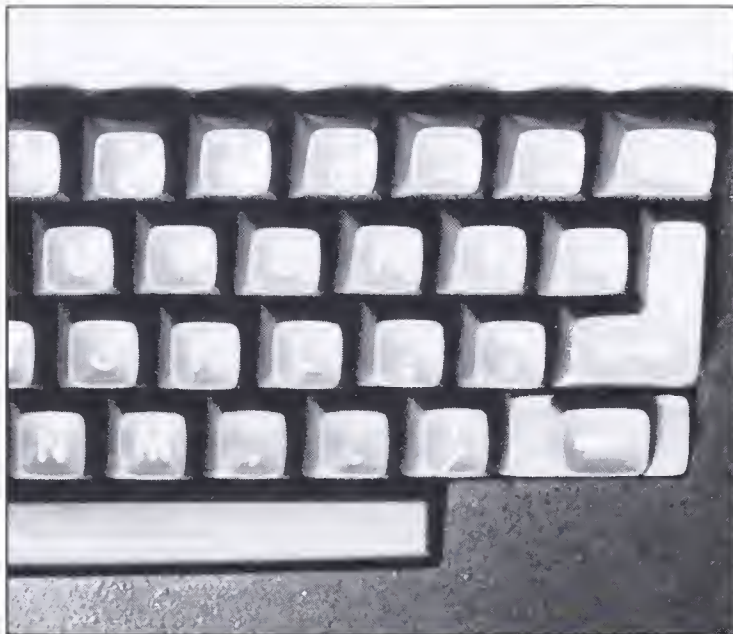
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# It's Better.







## The Pot of Gold

The "we" in an editorial usually signifies that the comments made reflect the philosophy of the organ—in this case, the HAWAII MEDICAL JOURNAL. It is important, therefore, that the reader of the following treatise understand fully that it is the opinion of the writer whose name closes the last paragraph; others of our membership may agree with the sentiments expressed, but the above disclaimer must be clearly expressed. What follows is in the first person singular.

I do not wish to sever my relationship with the Medical/Dental Staff at The Queen's Medical Center (QMC) but I may have to do so!

My association with the Queen's Hospital goes back 60 years to when my father, the late C.F. Reppun, M.D., became a member. As a small boy, I would wait in his old, square Studebaker, parked on the central oval of royal palms, while he, in his white Pongee suit, made rounds inside with the likes of Doctors Straub, Doolittle, and Arnold Sr., Fennel, Milnor and Nils Larsen.

I can understand why the governing body of QMC is establish-

ing the new Affiliated Staff category of membership, but I disapprove of the apparent surrender by the Medical Executive Committee and the Board of Directors to the pressures of lawyers and insurance carriers.

It is unfortunate that the courts of this country have favored the granting of large awards to patients who have accepted the risks of medical treatment (as against not getting any treatment at all). Modern medicine is indeed daring in the heroics of invasive procedures, but therein lies much of its spectacular success.

There already is available a huge pot of monies from malpractice insurance premiums paid, and the temptation to dip into the pot is exceedingly great in this litigious and materialistic society of ours.

It is well known that the legal profession has a considerable stake in this lottery. The truly aggrieved and harmed patient (actually a rarity) receives a relatively small portion of the award. The insurance carrier, on the other hand, is prone to sacrifice the truth of an issue to settle for a lower award. The present system is not one conducive to the pursuit of justice.

It is understandable, therefore, that hospitals, as public or quasi-public institutions within which physicians apply their acquired skills—impersonal institutions which vitiate the close doctor/patient relationship—are more prone to suits if any little thing goes wrong; the "wrong" may be done by a physician on the staff, but the hospital may stand liable, as landlord.

It is equally understandable why QMC (other hospitals are bound to follow suit) has gone in the direction of forcing physicians practicing within its walls to continue to the pot of gold, thus easing the hospital's burden.

However, it is unfortunate that we physicians and our working places, the hospitals, are giving in—not fighting back—and are not stemming the tide of litigation. We are giving in to the predators by sweetening the pot, and thereby contributing vastly to the escalating costs of hospital and medical care.

Since my own medical practice is centered at Castle Hospital

# Nobody's perfect.

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# PORSCHE



on the Windward side, where I am on Active Staff, with my office in Kaneohe, I do not aspire to Active Staff status at QMC. I consider myself privileged to be on the Courtesy Staff and I relish that. It allows me to see the patients that I refer to metropolitan Honolulu specialists for hospitalization at QMC. The same goes for St. Francis, Kuakini and Kapiolani Children's Medical Center. I feel I can contribute to the care of my patients by exerting a measure of medical management of their whole person, as a member of the medical team, and by interjecting my knowledge of the patient's background (sometimes spanning 30+ years!), by writing up a history and physical, by adding a pertinent progress note as I make a visit, by passing on a clinical suggestion to house staff or attending as I review the chart. I also appreciate being consulted when one of my patients comes in to the QMC emergency room.

Will all this be categorically terminated if I choose to go onto the Affiliated Staff? And because I do not carry malpractice insurance? Because I try to practice the kind of one-to-one medicine that quickly leads to respect, trust, and friendship between a patient and his physician?

"Affiliated Staff" is a euphemism for a "black hole" in our celestial galaxy, a nothing, a minus entity! What sort of an association with QMC does that leave us?

Since I personally will not grovel and submit to the lawyer/insurance complex, it seems as if my long association with Queen's must terminate. Perhaps I can apply for "Honorary Staff" status, but that too smacks of being put out to pasture.

Auwe! Auwe! This country, like its far distant antecedent, is going the way of worshipping the Golden Age (of insurance)!  
J.I. Frederick Reppun, M.D.



## HMA Council Highlights

The following items have been discussed at HMA Council meetings over the past few months:

- Public Affairs Committee and Auxiliary members were judges for the Science and Engineering Fair. Outstanding medical exhibits by Hawaii highschoolers garnered 8 awards from HMA.
- "Hawaiian Yesterdays", a pictorial history of Hawaii by Ray Jerome Baker will be available to HMA members at a discount of over 20%, through the good work of the Membership Benefits Committee.
- "Body Talk", on educational TV (KHET-KMEV), will be seen in a new series of 13 programs in fall of '83. TV-Radio Committee has been helping with topics and speakers.
- A survey of physicians in the Waianae area, regarding support for continued federal funding for the Center Waianae Coast Comprehensive Health, has been underway by the Honolulu County Medical Society, according to HCMS President Dr. Nardine Bruce.
- Problems of physicians reporting patients who may present drunk-driving hazards will be reviewed by the Public Safety Committee.

# Everybody's persuasive.

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Sean Lindamood, Car and Driver.

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Larry Griffin, Car and Driver.

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Rich Ceppos, Car and Driver.



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## Over the Editor's Desk

Harry L. Arnold Jr., M.D.

Medical students, residents, and practicing physicians should all read Albert R. Jonsen's insightful essay, "Watching the Doctor," in the June 23 issue of the *New England Journal of Medicine*, 308:1531-1535. We can all profit by being reminded of the theme of this article: our built-in dilemma between self-interest and altruism. The author, a Ph.D. in religious studies, teaches "ethics in medicine" as a professor in the University of California Medical School in San Francisco.

\* \* \*

*Earl B. Dawson & Co. announce in the May 27 issue of JAMA that "sticky" sperm come unstuck in men who take 500 mg of vitamin C twice a day.*

\* \* \*

Hewlett-Packard announces a new computer-controlled diode-array spectrophotometer, HP 8451A, for high-volume sample analysis. You wouldn't be interested.

\* \* \*

*A close imitation of human milk, Improved Formulation Enfamil, is announced by Mead Johnson & Co. It comes with or without iron and is available in 3 forms: ready to use, concentrate, and powder.*

\* \* \*

Electromyography has taken a big step forward in the EMG 100T from Thought Technology, 2180 Belgrave Ave., Montreal, PQ, H4A 2L8, Canada. Used for muscle rehabilitation and relaxation training, it operates for more than 100 hours on a 9V alkaline battery.

\* \* \*

*Abbott's new PAP-EIA, for monitoring the treatment of patients with cancer of the prostate, is the first of Abbott's products to use monoclonal antibodies. It monitors prostatic acid phosphatase levels. Ask your Abbott rep about it.*

\* \* \*

Cost savings of 25-33% by reducing need for repeat X-ray "takes" are reported from hospital X-ray departments that have installed Gammex's new miniature laser output head for positioning the X-ray tube. It's called the "Chest-a-line IV," and it projects 3 sagittal and 1 transverse sharp red lines to define the field of exposure. Write Gammex, 6685 N. Sidney Place, Milwaukee, Wisc. 53209.

\* \* \*

*Continued on page 346*

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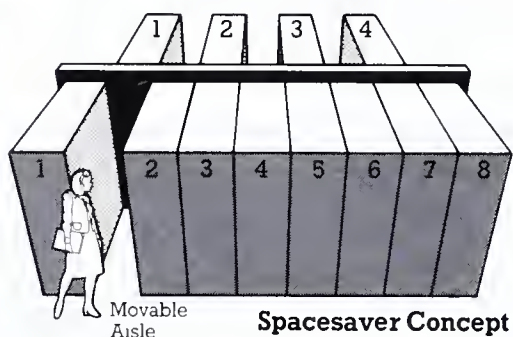
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*Valproic acid intolerance in epileptic patients who need it is avoided by the newly introduced enteric-coated form, Depakote (Abbott).*

\* \* \*

Help in preparing a resource guidebook for disabled persons to use during the 1984 Special Olympics (for the disabled) would be appreciated by Rheta King, director of the Los Angeles Comprehensive Rehabilitation Center. Call her at (213) 674-7050, extension 4117, if you'd like input into it.

\* \* \*

*If you treat patients for hypertension you ought to look into a new "step-2" anti-hypertensive agent, Hylorel (guanadrel sulfate, Pennwalt). It is said to have high efficacy and a low side-effect profile.*

\* \* \*

Sequoia-Turner offers a new low-cost, compact spectrophotometer with square cuvettes, an 8 mm band width, and digital readout. It's Model 340SQ, if you want to write them at 755 Ravendale Dr., Mountain View, Calif. 94043 and ask about it.

\* \* \*

*Don't buy a new transtelephonic arrhythmia surveillance system till you've looked*

*into Instrumedix's new LifeSigns Receiving System. Write them at 10950 S.W. 5th Ave., Beaverton, Ore. 97005.*

\* \* \*

A 3-foot hole in a 9-ton magnet, whose magnetic field is 20,000 times as strong as the earth's, is where the patient is placed for nuclear magnetic resonance (NMR) imaging, in General Electric's new NMR machine. It can study metabolism in any part of the body—the first time this has been possible. Probably you should take off your electronic watch first, and tell the doctor you wear a pacemaker!

\* \* \*

*Three initial books, in a new series explaining pain management through transcutaneous electrical nerve stimulation (TENS) in an advanced form called "Bio-stimulation," are announced by Biostim, Inc., Box 3138, Princeton, N.J. 08540.*

\* \* \*

Ronald Reagan told the AMA House of Delegates in June that "nuclear war cannot be won and must never be fought," a statement they applauded loudly.

## FELLOW PHYSICIANS

Many of you are referring to non-physician mental health providers.

The reasons are many: no follow-up contact with a psychiatrist in the past, the psychiatrist shortage until a few years ago, the belief that psychiatry is ineffective, etc.

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NOVEMBER 1983  
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**Indications:** Management of anxiety disorders, or short-term relief of symptoms of anxiety. Anxiety or tension associated with the stress of everyday life usually does not require treatment with an anxiolytic. Symptomatic relief of acute agitation, tremor, impending or acute delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in: relief of skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; atherosclerosis; stiff-man syndrome. *Oral forms* may be used adjunctively in convulsive disorders, but not as sole therapy. *Injectable form* may also be used adjunctively in: status epilepticus; severe recurrent seizures; tetanus; anxiety, tension or acute stress reactions prior to endoscopic/surgical procedures; cardioversion.

The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindications:** Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**ORAL:** Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

**INJECTABLE:** To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used IV: inject slowly, taking at least one minute for each 5 mg (1 ml) given; do not use small veins, i.e., dorsum of hand or wrist; use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly IV, it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea; have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

**Precautions:** If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, i.e., phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over sedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**INJECTABLE:** Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

**Adverse Reactions:** Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depres-

sion, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

**INJECTABLE:** Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

**Dosage:** Individualize for maximum beneficial effect.

**ORAL—Adults:** Anxiety disorders, relief of symptoms of anxiety—Valium tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

**Geriatric or debilitated patients:** Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

**Children:** Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

**INJECTABLE:** Usual initial dose in older children and adults is 2 to 20 mg I.M. or IV, depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.) For dosages in infants and children see below; have resuscitative facilities available.

**I.M. use:** by deep injection into the muscle

**I.V. use:** inject slowly, take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or IV, and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or IV, repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or IV initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or IV initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children administer IV slowly; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or IV, repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (IV route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (IV preferred). Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow IV preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful.

In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg IV within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

**Management of Overdosage:** Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, IV fluids, adequate airway. Use levaterenol or metaraminol for hypotension. Dialysis is of limited value.

**How Supplied:**

**ORAL:** Valium (diazepam/Roche) scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10. Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100, Prescription Paks of 30.

**INJECTABLE:** Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.





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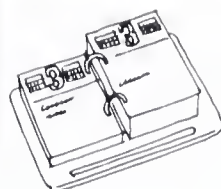
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Accredited Programs of CME allow one unit of AMA credit for each hour of instruction all "breaks." Asterisked programs also are accredited for AAFP prescribed credit.

## LOCAL ACCREDITED PROGRAMS ONGOING

For a complete list of ongoing programs, please refer to the September 1983 issue of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

## SPECIAL EVENTS

Oct. 29-Nov. 19 1983 Weekly workshops in different specialties—OB/GYN, ORTHO SURG, RAD, OPTH, ANES., INTL Association of Medical Specialists and Great Medical Get-aways. At: cruise ship USS Constitution through Islands, Honolulu, Hawaii. Further information: (205) 991-5533.

Nov. 19-26, 1983 CME 1087D Ethical Issues in Clinical Medicine, University of Washington, Division of CME, School of Medicine, SC-50, Seattle, Wash. 98195. At: Maui, Hawaii.

Nov. 20-23 1983 The Fourth Annual "Sports Medicine Now" Program, American College of Sports Medicine and the University of Hawaii, (916) 486-5834. To be held at the Kapa-lua Bay Hotel, Maui, Hawaii.

Nov. 26-Dec. 3 1983 Advances in Medicine, Methodist Hospital University of Tennessee, (901) 528-5547. To be held at the Hilton Hawaiian Village Hotel, Honolulu, Hawaii.

Nov. 27-Dec. 4 1983 Roche Sun Seminars, Infectious Diseases, Roche Laboratories & Creighton University, (203) 255-2618. To be held at the Inter-Continental Hotel, Wailea, Maui, Hawaii.

Dec. 2, 1983 AIDS and Genital Herpes: An Update for Hawaii's Health Professionals, Waikiki Health Center and Hawaii Chapter of the American Social Health Association. At: Ala Moana Americana Hotel, Honolulu, Hawaii. Contact: Yvonne Brewer, 524-3540.

Dec. 4-9 1983 Current Concepts in Emergency Care, 4th Annual, Institute for Emergency Education and WASA Chapter ACEP, (800) 426-2561. To be held at the Maui Surf Resort, Maui, Hawaii.

Dec. 4-11 1983 Seminar in Medicine, Infectious Diseases, Roche Laboratories & Creighton University School of Medicine, (203) 255-2618. To be held at the Inter-Continental Hotel, Wailea, Maui, Hawaii.

Dec. 5-9 1983 Diagnostic Radiology Seminar, University of California at San Francisco, Dept. of Radiology, Post-graduate Education, Room C-324, Third & Parnassus, San Francisco, Calif. 94143, (415) 666-5731, to be held at the Hyatt Regency Maui, Hawaii.

Dec. 11-13 1983 American Hospital Association, Engineering Update, Contact: Bev Rogers, 333 N. Michigan Avenue, Chicago, Ill., 60601. To be held at the Westin Ilikai, Honolulu, Hawaii.

Dec. 13-16 1983 Sexually Transmitted Diseases, Honolulu Medical Group Research and Education Foundation, 550 S. Beretania Street, Honolulu, Hawaii 96813, (808) 537-2211. To be held at the Prince Kuhio Hotel, Honolulu, Hawaii.

Continued on page 354



- Dec. 26-30 1983 Emotional Growth in Adult Life, American Institute of Medical Education, (213) 842-8818. To be held at the Kona Hilton, Big Island, Hawaii.
- Dec. 27-Jan. 1, 1984 Update 1983: Genitourinary Infections, Duke University, School of Medicine, Office of CME, Box 3306 DUMC, Durham, N.C. 27710. At: Honolulu, Hawaii.
- Dec. 28-30 1983 2nd Annual Alumni Course, Medical and Legal Questions, to be held at the University of Hawaii East-West Center. (Open to non-alumni as well.)
- Jan. 7-14, 1984 Pan-Pacific Surgical Association—17th Congress, Pan-Pacific Surgical Association, 1164 Bishop Street, Suite 1717, Box 553. At: Honolulu, Hawaii.
- Jan. 16-20, 1984 Gastro-intestinal and Hepatic Diseases, Honolulu Medical Group Research and Education Foundation, 550 S. Beretania Street, Honolulu, Hawaii 96813. To be held at the Mauna Kea Beach Hotel, Big Island, Hawaii.
- Jan. 15-21, 1984 AMA Winter Scientific Session. Contact: Bob Hobart, Dept. of Meeting Management, 535 N. Dearborn Street, Chicago, Ill. 60610. To be held at the Sheraton Waikiki, Royal Hawaiian, Surfrider, Moana, and Princess Kaiulani hotels in Honolulu, Hawaii.
- Jan. 16-22, 1984 Second Annual Topics in Internal Medicine, University of Colorado Health Sciences Center, Office of Post-graduate Education, Campus Box C295, 4200 East 9th Avenue, Denver, Colo. 80262, (303) 394-5241.
- Jan. 21-28, 1984 Pediatric Emergencies, University of California, San Diego, School of Medicine, La Jolla, Calif. 92093. At: Kona, Hawaii.
- Jan. 21-28, 1984 12th Annual Diagnostic Radiology Seminar, University of California at San Francisco, Dept. of Radiology, Post-graduate Education, Room C324, Third & Parnassus Avenue, San Francisco, Calif. 94143, (415) 666-5731. To be held on Kauai, Hawaii.

- Jan. 22-26, 1983 8th Annual Echocardiography Conference, Honolulu Medical Group Research and Education Foundation, 550 S. Beretania Street, Honolulu, (808) 537-2211. To be held at the Kahala Hilton Hotel, Honolulu, Hawaii.
- Feb. 2-9 1984 Pan American Conference on Fertility and Sterility, U.S. International Foundation for Studies in Reproduction, Inc., 112-44 69th Avenue, Forest Hills, N.Y. 11375. At: Kona, Hawaii.
- Feb. 2-11, 1984 Postgraduate Course in Infertility and Reproductive Endocrinology, U.S. International Foundation for Studies in Reproduction, Inc., 112-44 69th Avenue, Forest Hills, N.Y. 11375.
- Feb. 3-7, 1984 Advanced Seminar for Physicians, Administrators and Trustees, Estes Park Institute, Box 400, Englewood, Colo. 80151. At: Molokai, Hawaii.
- Feb. 4-10, 1984 Perinatal Medicine, University of Southern California School of Medicine, Post-graduate Division, KAM 320, 2025 Zonal Avenue, Los Angeles, Calif. 90033, (213) 224-7047. To be held at the Royal Lahaina Hotel on Maui, Hawaii.
- Feb. 11-18, 1984 A Course in Otolaryngic Allergy, American Academy of Otolaryngic Allergy, Director of Extramural Education, 1101 Vermont Avenue, N.W., Suite 302, Washington D.C. 20005. At: Kona, Hawaii.
- March 11-18, 1984 Kidney Diseases Course, University of Colorado Health Sciences Center, Office of Post-graduate Medical Education, Campus Box C295, 4200 East 9th Avenue, Denver, Colo. 80262, (303) 394-5241 or 394-5195. To be held on Maui.
- March 15-17, 1984 Mid-Life Issues, Hawaii Psychiatric Society and Area VII of the American Psychiatric Association. For further information call D. Chang, (808) 947-8573. To be held at the Maui Inter-Continental Hotel, Maui, Hawaii.
- March 16-23, 1984 The Spine, University of Washington, Continuing Medical Education, Health Sciences Center D-303, Seattle, Wash. 98195, (206) 543-1050. To be held at the Westin Wailea Beach Hotel, Maui, Hawaii.

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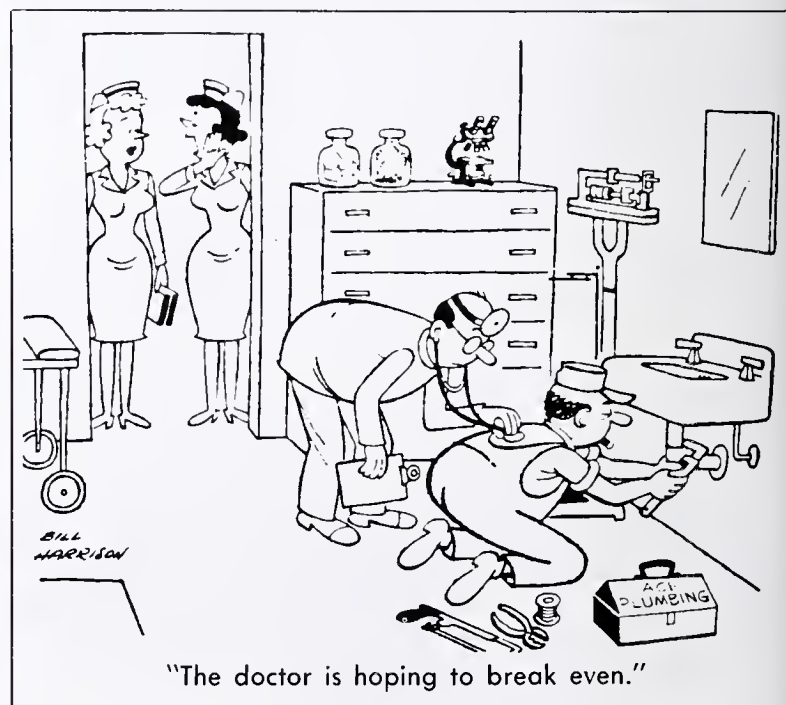
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## Brief Clinical Note

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D.G.M.



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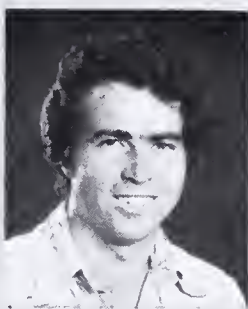
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## Editorial

### The Individual Physician's Role and the Sanctions of TEFRA

The Tax Equity and Fiscal Responsibility Act (TEFRA), passed by Congress in 1982, began to impact most hospitals by July 1983. It places a cap or limit on the amounts Medicare and Medicaid funds will pay for patients covered by those authorities, based on the level of payments made in 1982. After July 1, 1984, if there is a difference between what the federal government will pay for Medicare-Medicaid cases and what those cases cost a hospital, private patient cost-shift will be required to cover this difference. Classification of cases by placing them in Diagnosis Related Groups (DRGs), with respect to cost, will include room and bed, nursing service, ancillary services, and overhead cost. If there is inadequacy of payments from federal funds under the DRG system, cost-shifting to private patients will be required to make up the difference. Capital expenditure, medical education, malpractice cost, and nursing education will still be paid at cost.

#### What DRGs Neglect

The rationale in Diagnosis Related Groups has neglected the consideration of inaccurate diagnosis, distinction of intensity and severity in a single disease category, lack of clinical homogeneity, and actual hospital resource consumption.

A change of incentives to prevent cost-shifting would be directed toward replacing cost-per-stay (length of stay) of every Medicare-Medicaid patient and toward reducing cost-per-day. An attempt at reducing the intensity of care might be accomplished by admitting patients who are less sick and keeping them on a short-stay basis when possible. A hospital might be more receptive to private patients than to Medicare-Medicaid patients; in fact it might desire to "dump" the latter patients to other hospitals.

#### Other Fiscal Pressures

There are other fiscal pressures on hospitals: charity cases and bad debts which are not reimbursed by Medicare-Medicaid funds; educational pursuits; and research. Costs of education (residency training and medical student programs) and research continue to escalate. Who will pay for these things?

Should the Blue Cross-Blue Shield providers pick up these costs along with the cost-shifts generated by capped Medicare-Medicaid funds, and in turn raise their rates so that their subscribers pay the eventual bill? Naturally the Blues do not feel that this is their role.

Hospitals are concerned. Their reduction for 1983-84 will probably be along the lines of budget cuts, length-of-stay review, admission appropriateness review, patient deposits, and product standardization. For 1984-85, perhaps the following will be added: program cut-backs, ancillary charge analysis, MD comparison by diagnosis, price competition, and direct contracting.

Where does the individual physician, who brings patients to a hospital, fit in? Does he have a singular role? If he is overutilizing services, are there ways for him to be more efficient? Perhaps this is a unique opportunity for physicians and hospitals to work together.

In reviewing a book titled *Cost, Risk, and Benefits of Surgery* by Bunker, Barnes, and Mosteller (N.Y., Oxford Univ. Press, 1977), Bergan<sup>1</sup> states that "life saving methods have now been developed that may well be beyond the capacity of society to pay for them." Most metropolitan hospitals are using these methods extensively daily. The realization of the rising costs of adjuncts to medical and surgical care is as difficult as recognizing that air conditioning in automobiles in Hawaii is not a necessity, or that we are one day going to run out of the petroleum from which are made disposable plastic catheters, syringes, tubing, wash basins, and water pitchers. The average individual working in a hospital is often naively unaware of the incurring of unnecessary expense. A rude awakening to a green intern, eager to practice "compleat" medicine, is a list of the cost of laboratory procedures he is wont to order. (See Fig.)

#### Cost of Lab Tests

In the actual writing of orders, especially by a house officer, there is often evident a lack of planning. He may be intent on knowing something about the liver, so he orders a serum bilirubin, serum proteins, alkaline phosphatase, and SGOT. The amount of blood necessary for these tests is ten milliliters, and the cost is \$50.00 (Fig.) If a stat (immediate) test is ordered, an additional charge, per laboratory procedure, is \$3.20. An hour later the house officer remembers his patient is a diabetic, so he asks for a blood sugar and blood urea nitrogen. This means an additional blood sample of 10 milliliters, with another painful venipuncture for the patient. The additional cost is \$38. Sometimes there are additional blood samples that are needed which further deplete the patient's blood volume and involve additional cost. A much more sensible practice, unless there is great urgency for results, is to order a profile such as the Chemistry 12 Profile, which encompasses 12 major determinations including those mentioned above as well as serum calcium, cholesterol, uric acid, creatinine, and others. The cost of this test at our hospital is \$30. If a sodium and potassium are "thrown in," it becomes a Chemistry 14 with a cost of \$37.

In the realm of treatment, there is a tendency to prolong the use, sometimes unnecessarily, of expensive modalities such as respiratory therapy, with its costly equipment, supplies and therapists' services, or of high-priced drugs. In elective surgery, there are examples, from actual practice, of overuse: pacemaker insertion in a 90-year-old patient who did not want it in the first place; gastrectomy in a terminal cancer patient with multiple metastases; low-level limb amputation in a patient with diabetic gangrene, when circulation in the stump area is already compromised, leading to another amputation at a higher level.

Schroeder<sup>2</sup>, at a conference on cost control in Washington, D.C., reported a study relating utilization and cost of laboratory work to successful treatment of hypertensive patients. He discovered that where physicians ordered the most laboratory examinations, their patients had less return of their blood pressure to normal. This implies that the more tests a physician orders, the less confidence he has in his own judgment.

The AMA National Commission on the Cost of Medical Care has an excellent long-range plan to remedy high costs. It is described in the recent Summary Report of the Commission.<sup>3</sup> But what we need are immediate practical measures, not from the drawing boards of public health doctors, but at the bedside, in the hands of active clinicians, as they write orders on their patients.

#### Immediate Measures

Most medical centers can institute the following quite easily:

1. A return to bedside medicine taught by astute clinicians like Arthur Bloomfield, with reintroduction of the concept that laboratory examination should be performed to *confirm* a clinical diagnosis. Emphasis should be placed on teaching that the patient is a person, not a "case."

2. The teaching in medical schools, to house officers, and

*Continued on page 358*

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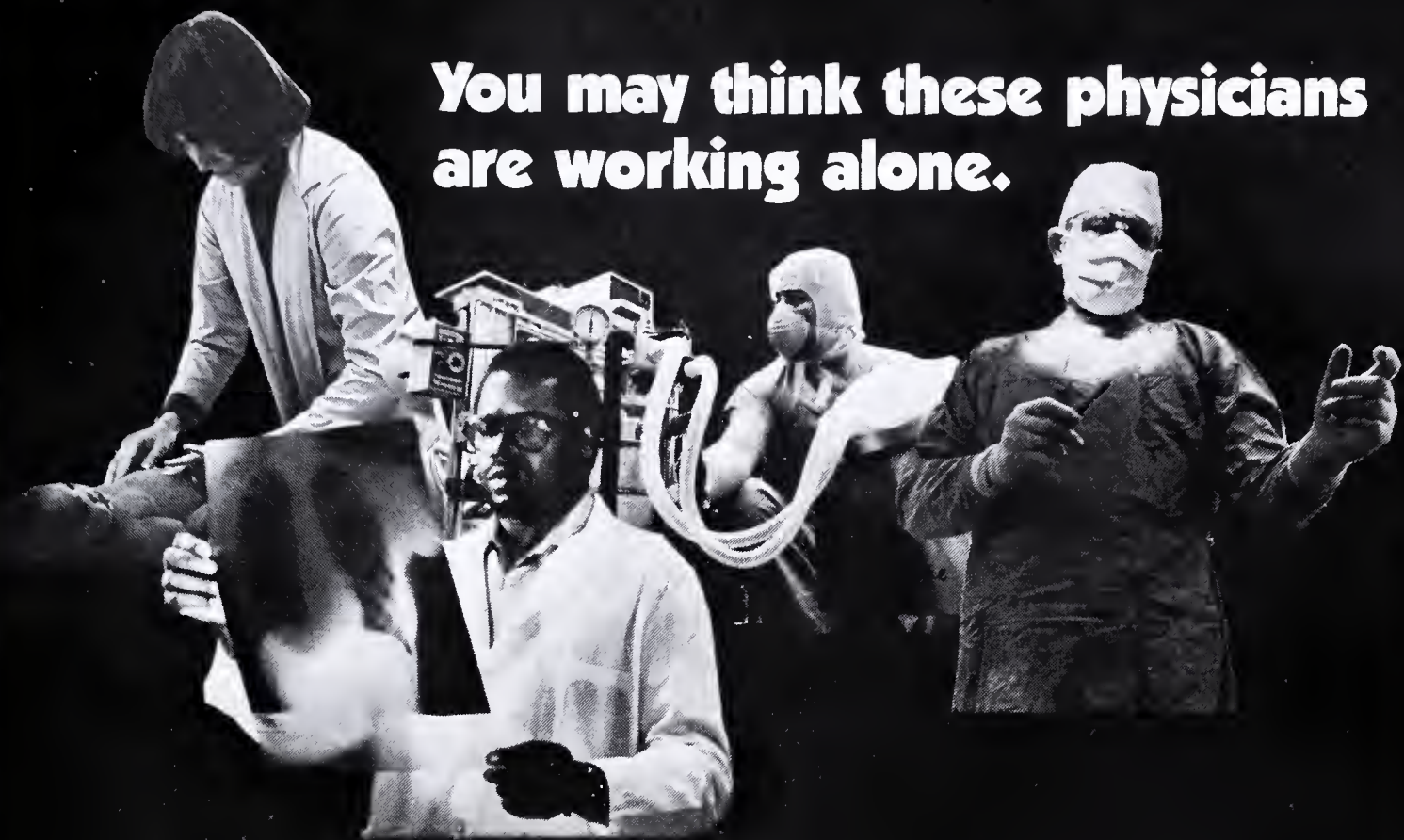


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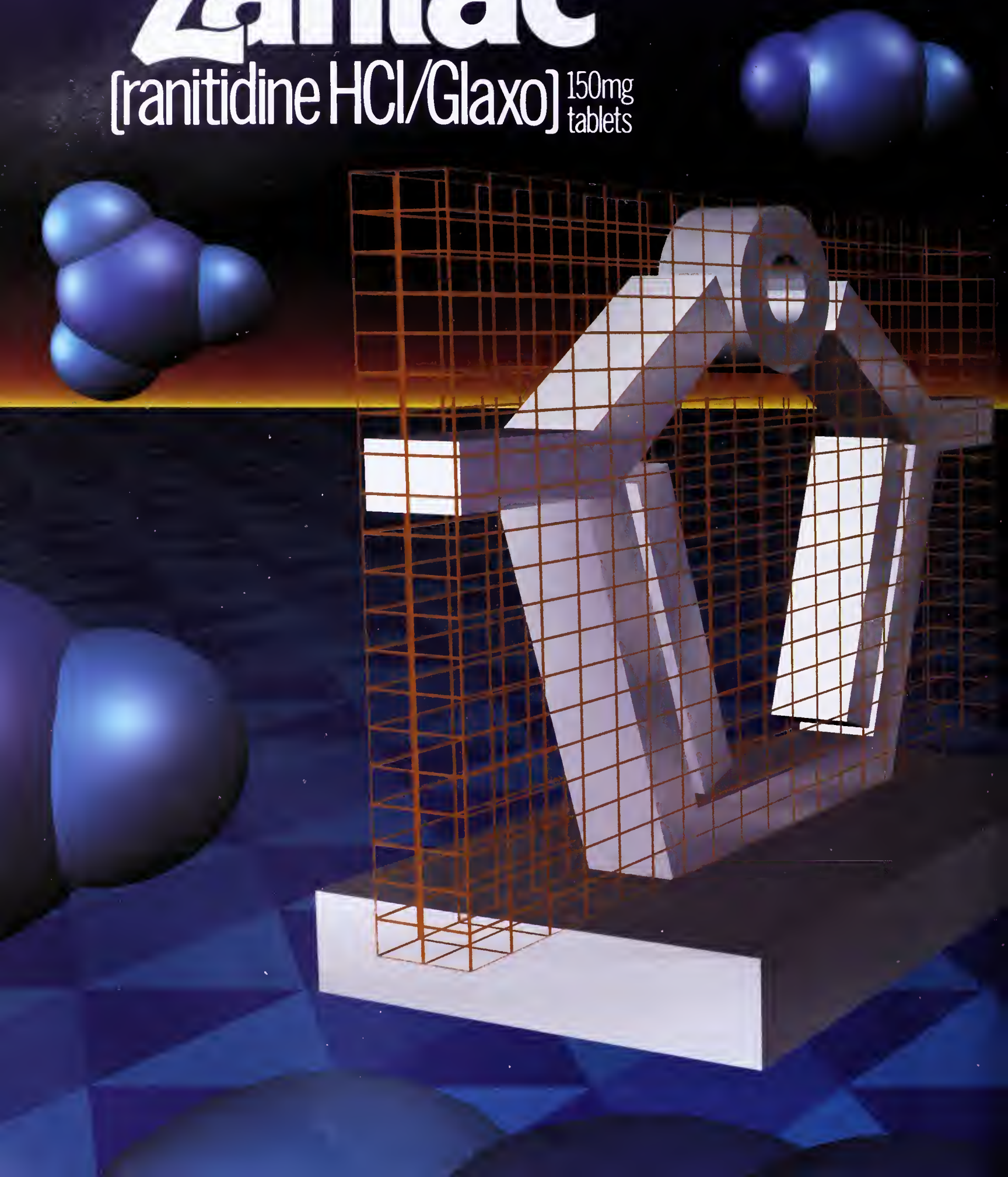
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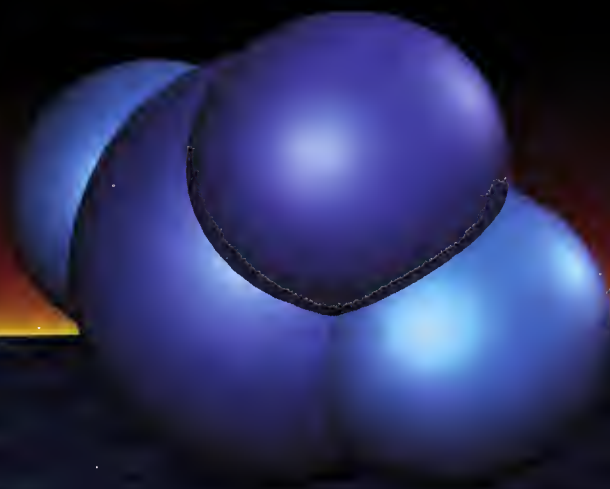
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[ranitidine HCl/Glaxo] 150mg  
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# Unsurpassed activity in gastric acid inhibition: for active duodenal ulcer and pathological hypersecretory conditions



## Zantac is a new chemical compound

- Not a histamine-related imidazole—a furan compound.

## Zantac offers important patient benefits

- Single-dose action for up to 12 hours—b.i.d. administration. Four weeks of therapy for most patients with active duodenal ulcer.
- No interaction with warfarin, theophylline and diazepam.
- Effective and well tolerated even in pathological hypersecretory conditions.
- For adverse reactions see complete prescribing information.



# Unsurpassed activity in gastric acid inhibition

# Zantac®

(ranitidine HCl/Glaxo) 150mg tablets

**DESCRIPTION:** The active ingredient in ZANTAC® Tablets, ranitidine hydrochloride, is a histamine H<sub>2</sub> receptor antagonist. Chemically it is N-[2-[[[5-[[[dimethylamino]methyl]-2-furanyl]methyl]thio]ethyl]-N'-methyl-2-nitro-1, 1-ethenediamine, hydrochloride. It has the following structure:



The empirical formula is C<sub>13</sub>H<sub>22</sub>N<sub>4</sub>O<sub>3</sub>S·HCl, representing a molecular weight of 350.87.

Ranitidine hydrochloride is a white to pale yellow granular substance which is soluble in water. It has a slightly bitter taste and sulphur-like odor.

Each tablet for oral administration contains 168 mg of ranitidine hydrochloride, equivalent to 150 mg ranitidine.

**CLINICAL PHARMACOLOGY:** ZANTAC® (ranitidine hydrochloride) is a competitive, reversible inhibitor of the action of histamine at the histamine H<sub>2</sub> receptors, including receptors on the gastric cells.

ZANTAC does not lower serum Ca<sup>++</sup> in hypercalcemic states.

ZANTAC is not an anticholinergic agent.

## Antisecretory Activity:

### 1. Effects on acid secretion:

ZANTAC inhibits both daytime and nocturnal basal gastric acid secretion as well as gastric acid secretion stimulated by food, histamine and pentagastrin, as shown in the table below

Effect of Oral ZANTAC on Gastric Acid Secretion

	Time After Dose, hrs.	% Inhibition of Gastric Acid Output by Dose, mg			
		75-80	100	150	200
Basal	Up to 4		99	95	
Nocturnal	Up to 13	95	96	92	
Betazole	Up to 3		97	99	
Pentagastrin	Up to 5	58	72	72	80
Meal	Up to 3		73	79	95

It appears that basal, nocturnal and betazole stimulated secretion are most sensitive to inhibition by ZANTAC, responding almost completely to doses of 100 mg or less, while pentagastrin and food stimulated secretion are more difficult to suppress.

### 2. Effects on other gastrointestinal secretions:

**Pepsin:** Oral ZANTAC 150 mg did not affect pepsin secretion. Total pepsin output was reduced in proportion to the decrease in volume of gastric juice.

**Intrinsic factor:** Oral ZANTAC 150 mg had no significant effect on pentagastrin-stimulated intrinsic factor secretion.

**Serum gastrin:** ZANTAC (ranitidine hydrochloride) has little or no effect on fasting or postprandial serum gastrin.

### 3. Other pharmacological actions:

- Hepatic blood flow reduced 20%. Significance unknown.
- Gastric bacterial flora—increased in nitrate-reducing organisms, significance not known.
- Prolactin—no effect (IV bolus) or less increase than cimetidine.
- Other pituitary hormones—no effect on serum gonadotropins, TSH, GH. Possible impairment of vasopressin release.
- No change in cortisol or aldosterone.
- No effect on count, motility or morphology of sperm, androgen level, estradiol, testosterone.
- No effect on penile erection, sexual arousal or ejaculation.

### 4. Pharmacokinetics:

ZANTAC is 50% absorbed after oral administration compared to an IV injection with mean peak levels of 440-545 ng/ml occurring at 2-3 hours after a 150 mg dose. The elimination half-life is 2.5-3 hours.

Absorption of ZANTAC is not significantly impaired by concomitant administration of food or antacids. Propantheline slightly delays and increases peak blood levels of ZANTAC, probably by delaying gastric emptying and transit time.

Serum concentrations necessary to inhibit 50% of stimulated gastric acid secretion are estimated to be 36-94 ng/ml. Following a single oral dose of 150 mg, serum concentrations of ZANTAC (ranitidine hydrochloride) are in this range up to 12 hours. However, blood levels bear no consistent relationship to dose or degree of acid inhibition.

The principal route of excretion is the urine, with approximately 30% of the orally administered dose collected in the urine as unchanged drug in 24 hours. Renal clearance is

about 410 ml/min, indicating active tubular excretion.

In man, the N-oxide is the principal metabolite in the urine; however this amounts to less than 4% of the dose. Other metabolites are the S-oxide (1%) and the desmethyl ranitidine (1%). The remainder of the administered dose is found in the stool.

The volume of distribution is about 1.4 L/kg. Serum protein binding averages 15%.

## Clinical Trials:

### Duodenal Ulcer

In a multicenter, double-blind controlled U.S. study of endoscopically diagnosed duodenal ulcers, earlier healing was seen in the ZANTAC-treated patients as shown below:

	ZANTAC +		Placebo +	
	Number Entered	Healed/Evaluable	Number Entered	Healed/Evaluable
Outpatients				
Week 2	149	54/147 (37%)*	146	29/137 (21%)
Week 4		109/148 (74%)*		68/137 (50%)

\*p = 0.0014

\*\*p = 0.0001

+ All patients were permitted prn antacids for relief of pain.

In these studies, ZANTAC-treated patients reported a reduction in both daytime and nocturnal pain, and they also consumed less antacid than the placebo-treated patients.

	Median number of daily doses of antacid	
	Ulcer Healed	Ulcer Not Healed
ZANTAC	0.06	0.71
Placebo	0.71	1.43

During the clinical trials, some not healed at 4 weeks were re-randomized to either placebo or ranitidine, with the results after 4 weeks shown below.

Not healed on:	Retreated with:	Healed:
Placebo	Placebo	10/21
Placebo	Ranitidine	15/24
Ranitidine	Ranitidine	5/8
Ranitidine	Placebo	8/19

It can be seen that there are trends weakly favoring ranitidine but none of the differences are statistically significant.

Studies have been limited to short-term treatment of acute duodenal ulcer. Patients whose ulcers healed during therapy had recurrences of ulcers at the usual rates. There have been no systematic studies to evaluate whether continued treatment with ZANTAC alters recurrence rates.

### Pathological Hypersecretory Conditions

(such as Zollinger-Ellison Syndrome)

ZANTAC inhibits gastric acid secretion and reduces occurrence of diarrhea, anorexia, and pain in patients with pathological hypersecretion associated with Zollinger-Ellison Syndrome, systemic mastocytosis and other pathological hypersecretory conditions (e.g. post-operative, "short gut" syndrome, idiopathic). Use of ZANTAC was followed by healing of ulcers in 8 of 19 (42%) patients who were intractable to previous therapy.

## INDICATIONS AND USAGE:

ZANTAC® (ranitidine hydrochloride) is indicated in:

1. Short-term treatment of active duodenal ulcer. Most patients heal within 4 weeks and the usefulness of further treatment has not been demonstrated. Studies available to date have not assessed the safety of ranitidine in uncomplicated duodenal ulcer for periods of more than 8 weeks.

2. The treatment of pathological hypersecretory conditions (e.g., Zollinger-Ellison Syndrome and systemic mastocytosis).

In active duodenal ulcer and hypersecretory states, concomitant antacids should be given as needed for relief of pain.

**CONTRAINDICATIONS:** There are no known contraindications to the use of ZANTAC® (ranitidine hydrochloride).

## PRECAUTIONS:

### General

1. Symptomatic response to ZANTAC® therapy does not preclude the presence of gastric malignancy.

2. Since ZANTAC is excreted primarily by the kidney, dosage should be adjusted in patients with impaired renal function (see Dosage and Administration). Caution should be observed in patients with hepatic dysfunction; ZANTAC is metabolized in the liver and, at present, the effects of hepatic disease on the metabolism of ZANTAC is unknown.

### Laboratory Tests

False positive tests for urine protein with Multistix® may occur during ZANTAC therapy and therefore testing with sulphosalicylic acid is recommended.

### Drug Interaction

Potential of warfarin-type anticoagulants has not been observed with concomitant ZANTAC administration. Likewise no clinically significant drug interactions have been observed between ZANTAC and theophylline or ZANTAC and diazepam. Drug interactions of this type are not expected since ranitidine does not significantly interact with the cytochrome P450 linked drug metabolizing enzyme system.

### Carcinogenesis, mutagenesis, impairment of fertility

There was no indication of tumorigenic or carcinogenic effects in lifespan studies in mice and rats at doses up to 2000 mg/kg/day.

Ranitidine was not mutagenic in standard bacterial tests (*Salmonella*, *E. Coli*) for mutagenicity at concentrations up to the maximum recommended for these assays.

In a dominant lethal assay a single oral dose of 1000 mg/kg to male rats was without effect on the outcome of 2 matings per week for the next 9 weeks.

### Usage in Pregnancy

Pregnancy Category B. Reproduction studies have been performed in rats and rabbits at doses up to 160 times the human dose and have revealed no evidence of impaired fertility or harm to the fetus due to ZANTAC (ranitidine hydrochloride).

There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

## Nursing Mothers

ZANTAC is secreted in human milk. Caution should be exercised when ZANTAC is administered to a nursing mother.

## Pediatric Use

Safety and effectiveness in children have not been established.

## Use in Elderly Patients

Ulcer healing rates in elderly patients (65-82 years) were no different from those in younger age groups. The incidence rates for adverse events and laboratory abnormalities were also not different from those seen in other age groups.

## ADVERSE REACTIONS

Headache has been found to be more frequent in ZANTAC®-treated patients (3%) than placebo-treated patients (2%). The following symptoms have been reported in ZANTAC-treated patients with a frequency of 1% or less: malaise, dizziness, constipation, nausea, abdominal pain and rash.

Decreases in white blood cell and platelet count have occurred in a few patients. These did not lead to cessation of treatment and were clinically insignificant. There have been no reported cases of agranulocytosis or aplastic anemia. Some small increases in serum creatinine have been noted in patients receiving ZANTAC (ranitidine hydrochloride).

Some increases (up to 5 times the upper limit of normal in one case) in serum transaminases and gamma-glutamyl transpeptidase have been reported. Rare cases of hepatitis have been reported.

In normal volunteers, SGPT values were increased to at least twice the pre-treatment levels in 6 of 12 subjects receiving 100 mg q.i.d. IV for 7 days, and in 4 of 24 subjects receiving 50 mg q.i.d. IV for 5 days. This dose-related effect of the IV formulation suggests that ZANTAC is potentially hepatotoxic. In placebo controlled studies of the oral formulation involving 2437 patients (1358 receiving ranitidine and 1079 patients receiving placebo), with most patients treated 4-8 weeks, there was no difference in incidence of SGOT-SGPT elevations between the 2 groups.

No clinically significant interference with endocrine or gonadal function have been reported.

**OVERDOSAGE:** There is no experience to date with deliberate overdosage. The usual measures to remove unabsorbed material from the gastrointestinal tract, clinical monitoring and supportive therapy should be employed.

Studies in animals receiving doses of ZANTAC® in excess of 225 mg/kg/d have shown muscular tremors, vomiting, and rapid respiration. Single oral doses of 1000 mg/kg in mice and rats were not lethal. Intravenous LD<sub>50</sub> values in rat and mouse were 83 mg/kg and 77 mg/kg, respectively.

## DOSAGE AND ADMINISTRATION:

### Duodenal Ulcer

The current recommended adult oral dosage of ZANTAC® for duodenal ulcer is 150 mg twice daily, the only dose shown to speed healing of duodenal ulcer in U.S. clinical trials. Smaller doses have been shown to be equally effective in inhibiting gastric acid secretion in U.S. studies, and several foreign trials have shown that 100 mg b.i.d. is as effective as the 150 mg dose.

Antacids given concomitantly and as needed for relief of pain do not interfere with the absorption of ZANTAC.

Since 37% of patients can be expected to show complete healing at the end of two weeks, endoscopy at that time may spare many patients an additional period of treatment.

### Pathological Hypersecretory Conditions

(such as Zollinger-Ellison Syndrome)

Recommended adult oral dosage: 150 mg twice a day. In some patients it may be necessary to administer ZANTAC 150 mg doses more frequently. Doses should be adjusted to individual patient needs, and should continue as long as clinically indicated. Doses up to 6 g/day have been employed in patients with severe disease.

**Dosage adjustment for patients with impaired renal function.** On the basis of experience with a group of subjects with severely impaired renal function treated with ZANTAC, the recommended dose in patients with a creatinine clearance less than 50 ml/min is 150 mg every 24 hours. Should the patient's condition require, the frequency of dosing may be increased to every 12 hours or even further with caution. Hemodialysis reduces the level of circulating ranitidine. Ideally, the dosage schedule should be adjusted so that the timing of a scheduled dose coincides with the end of hemodialysis.

## HOW SUPPLIED

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# Glaxo

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# Platelet Satellitism in L.E. Preparation

Robert T.S. Jim, M.D., Honolulu.

*This report describes a new phenomenon hitherto undescribed of platelet satellitism around homogeneous masses in an L.E. preparation in a patient with suspected drug-induced thrombocytopenia.*

Platelet satellitism around leucocytes in blood smears is well known.<sup>1-3</sup> Adherence of platelets around homogeneous hyaline masses in L.E. preparation has not previously been described. This report describes this unusual phenomenon in a patient with drug-induced pancytopenia.

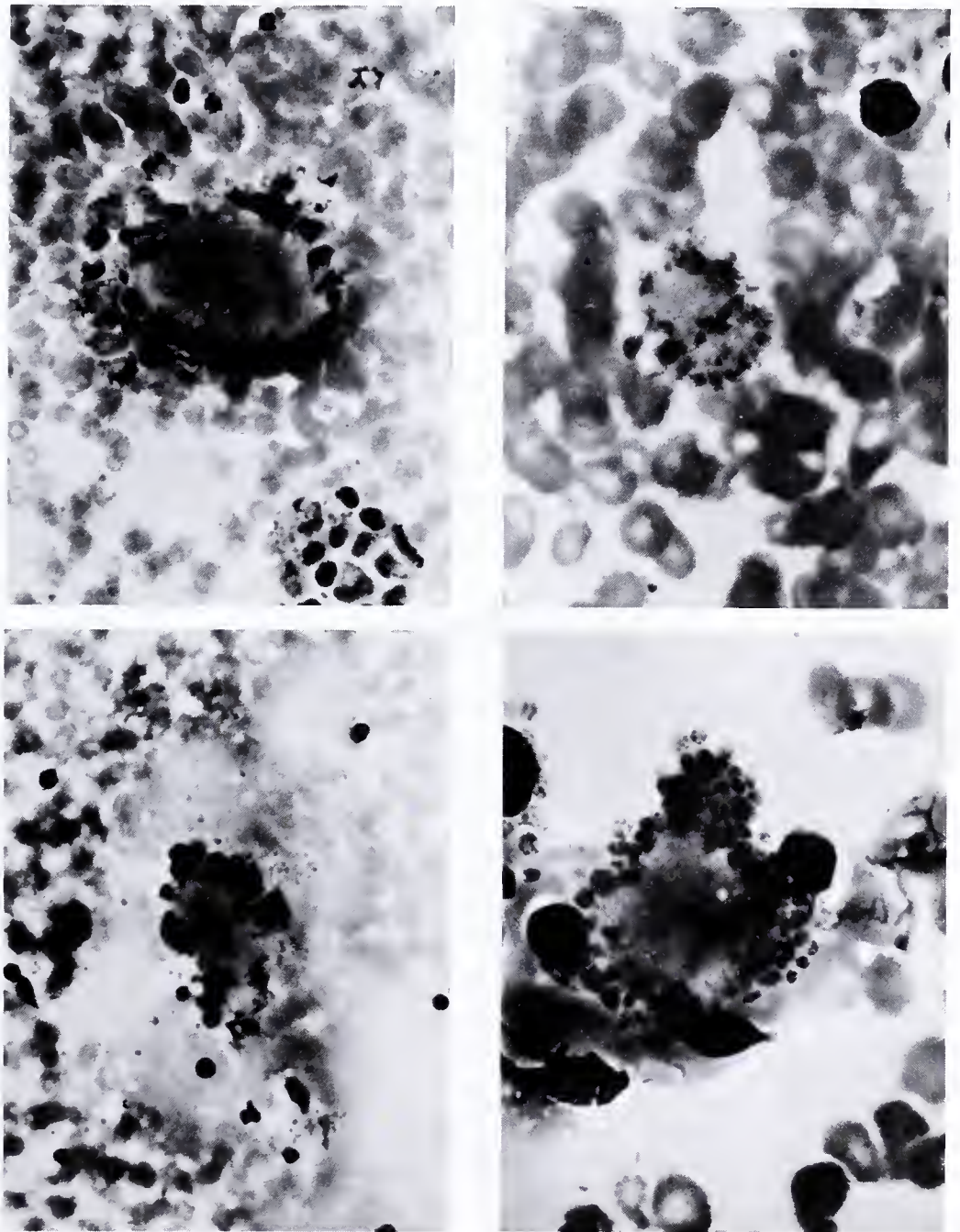
## Case Report

A 62-year-old woman with hypertension, diabetes mellitus, and renal failure, on hydralazine, methyldopa, isosorbide, and captopril, developed *E. coli* septicemia and severe pancytopenia. WBC was  $100/\text{mm}^3$ ; hemoglobin 6.5 gm/dl; platelet count  $2000/\text{mm}^3$ ; differential: lymphocytes 92% and monocytes 8%; reticulocyte count 0.1%; MCV  $83.5 \mu^3$ ; MCH 30.1  $\mu\mu$ ; MCHC 36%; serum creatinine 5.2 mg; SGOT 180 units; Coombs tests, direct and indirect, negative; ANA positive 1:32, diffuse type. Posterior iliac crest bone marrow aspiration and biopsy revealed severe hypoplasia, increased fat, many mature lymphocytes, plasma cells, stromal reticulum and fibroblasts. L.E. preparation was negative for inclusions; however, numerous round pinkish homogeneous hyaline masses of varying sizes ( $10-70 \mu$ ) were seen surrounded by platelets at the periphery (see photography).

## Discussion

The platelet adherence to the hyaline masses bears striking resemblance to platelet adherence referred to previously as platelet satellitism,<sup>1</sup> granulocyte rosettes,<sup>2</sup> or platelet-leucocyte aggregation.<sup>3</sup> These hyaline masses may be lysed neutrophil nuclear material or circulating immune complexes to which the platelets have become attached. Hydralazine, methyldopa and captopril may induce immune hypersensitivity phenomena,<sup>4, 5</sup> the latter also fatal bone marrow suppression.<sup>6</sup> The striking platelet adherence to the hyaline masses suggests a mechanism for drug-induced thrombocytopenia.

Figures: Platelet satellitism in L.E. preparation Wright's stain, magnification 1000X.



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# Is Fibrinogen a Marker of Cancer Progression?

Scott Oishi, Bessie Kam, and Noboru Oishi, M.D.,\* Honolulu.

• *Fibrinogen levels were determined in various types of patients—benign disease (controls), hematopoietic malignancies, malignancy with and without evidence of active locally recurrent or metastatic disease. A total of 384 determinations were done on 210 patients. Highest levels were found in patients with active cancer (mean  $458 \pm 155$  mg/dl). Cancer patients who had definitive surgery with no evidence of disease had a mean level of  $335 \pm 90$  mg/dl, whereas patients with benign disease who served as controls had a mean value of  $268 \pm 66$  mg/dl. Monitoring of fibrinogen levels in 6 patients with active disease during the course of treatment suggests that the levels may predict response and progression of disease.*

Fibrinogen is a glycoprotein with a molecular weight of about 340,000 daltons. It is produced by the liver and its principal role is in coagulation, with the formation of fibrin through the action of thrombin.<sup>1</sup> Fibrinogen may be considered an acute phase reactant, since it increases in inflammatory diseases and also in pregnancy.<sup>2</sup> Fibrinogen levels are decreased in severe hepatocellular disorders and in hypothyroidism.<sup>2, 3, 4, 5, 6, 7</sup>

Sun et al.<sup>8</sup> reported increase in fibrinogen levels in 55% of 61 patients with various malignancies. These investigators studied a number of coagulation parameters and found that only 3 out of 61 patients had no coagulation abnormalities. It is well known that cancer patients have bleeding and/or thrombotic tendencies.<sup>2, 9, 10, 11</sup>

In this study, fibrinogen levels have been monitored in cancer patients during the course of their illness. The data have been examined to assess whether fibrinogen levels would indicate the status of the activity of malignancy in these patients.

## Materials and Methods

### Source of Samples:

a. *Benign Disease.* These patients had fibrinogen levels as part of their coagulation profile. The majority of these were preoperative patients who were undergoing a surgical procedure; for example, hysterectomy, cholecystectomy, and cataract resection. A total of 78 patients were examined.

b. *Hematopoietic Malignancies.* The patients had acute leukemias, chronic leukemias, and Hodgkin's and non-Hodgkin's lymphomas. There were 18

patients in this group.

c. *Cancer-Active Group.* These patients had recurrent disease or at the time of diagnosis had disseminated disease. This group was comprised of 55 patients.

d. *Cancer-No Evidence of Disease (NED).* This group had definitive surgical resection with no evidence of disease. A total of 59 patients were examined from this group.

Informed consent was obtained from all participants.

### Determination of Fibrinogen Levels:

The Bio/Data Coagulation Profiler (Bio/Data Corporation, Horsham, Pa.) was used for all the results presented here. Blood was obtained by venipuncture and added to 3.8% sodium citrate tubes at a 9:1 mixture. The solution was mixed, and then spun at 3,400 RPM for 2-3 minutes. The citrated plasma samples were prewarmed to 37°C. A quality of 0.2 ml thrombin- $\text{CaCl}_2$ , showing a normal clotting time of 10-11 seconds, was prewarmed to 37°C for 3-6 minutes in duplicate in 7 x 70 mm test tubes. Then 0.1 ml test plasma was added to the test tubes using the Bio/Ette. The amplitude during the fibrin formation was recorded,

and then multiplied by a pre-determined constant, calculated from a fibrinogen control plasma. This value as mg/dl was then recorded as the fibrinogen level.

## Results

Fibrinogen levels were performed over a 6-month period from January to June 1980. Segregants were analyzed. The results are shown in Table 1. Among control samples, a total of 90 determinations were performed on 78 patients. The mean value was 268 mg/dl. Hematopoietic malignancies included patients having more than one determination. The mean value was 440 mg/dl.

Patients with solid tumors were separated into those with active disease and those with no evidence of disease (NED). Of the cancer-active patients, 153 determinations were done on the 55 patients with the mean value of 458 mg/dl. On the other hand, the cancer-NED group consisting of 59 patients with 111 determinations gave a mean value of 335 mg/dl.

In Table 2 and Figure 1 are presented the fibrinogen levels of the patients with solid tumors as analyzed according to site. Patients with active cancers of the urinary bladder and ovary gave mean levels of 598 mg/dl and 544 mg/dl, respectively, whereas those with no evidence of disease had levels of 358 mg/dl and 333 mg/dl. Twelve patients (35 samples) with active cancer of the lung had a mean fibrinogen level of 488 mg/dl, while 3 patients (10 samples) with no evidence of disease had a mean level of 355 mg/dl. In patients with cancer of the breast, 7 active patients (23 samples) showed a mean level of 378 mg/dl, whereas 19 patients with no evidence of the disease (31 samples) gave a mean of 309 mg/dl. In patients with colon and gastric cancers, the active disease patients showed 440 mg/dl and 402 mg/dl, respectively, versus 359 mg/dl and 320 mg/dl that were found in patients who were

*Continued on page 366*

TABLE 1. Fibrinogen Levels—Major Groups

Diagnosis	No. Patients	No. Samples	Mean (mg/dl)	Range (mg/dl)	Coefficient of Variation (%)	95% Confidence* Limits of the Mean
Benign-Control	78	90	268	121-444	24.7	254-282
Hematopoietic Malignancy	18	30	440	184-960	35.8	383-496
All Cancer-Active+	55	153	458	135-960	33.8	433-483
All Cancer-NED++	59	111	335	184-738	26.8	318-352

\*Any two groups with overlapping confidence limits are not significantly different ( $p > 0.05$ ).

+Active= Advanced Disease

++NED= No evidence of Disease

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primarily resected and demonstrated no residual disease.

Fibrinogen levels in monitoring individual patients with active disease are shown in Tables 3-8.

Patient A, a 70-year-old Korean man, had a long history of chronic obstructive pulmonary disease (Table 3). A left upper lobe mass was discovered in August 1979 and biopsy proved the lesion to be a poorly differentiated epidermoid carcinoma of the lung. He initially received radiation therapy because the lesion was unresectable. In March 1980, chemotherapy was started with cis-platinum, adriamycin, cytoxan, and procarbazine. His disease initially responded, but subsequently progressed and he died on July 7, 1980. His fibrinogen levels (Table 3) clearly showed an increase prior to the diagnosis of his malignancy and continued to rise thereafter.

Patient B, a 65-year-old Japanese man, had resection of a Dukes' B adenocarcinoma of the colon in 1972 (Table 4). He had a history of heavy alcoholic intake with cirrhosis of the liver. On February 16, 1979, pulmonary lesions were found and he was placed on 5-fluorouracil infusion, adriamycin, mitomycin-C, and streptozotocin. To this treatment regimen he showed partial response which lasted for over a year. He developed massive hemoptysis and succumbed to the disease on June 17, 1980. The levels of fibrinogen seemed to correlate with disease response and subsequent increase in levels may well have preceded clinical relapse. Chemotherapeutic drugs administered were the same throughout his course of treatment.

Patient C was a 64-year-old Japanese man with adenocarcinoma of the pancreas and liver metastases, diagnosed at laparotomy on May 20, 1979 (Table 5). A Roux-en-Y procedure was performed and subsequently he has been on 5-fluorouracil infusion, adriamycin, mitomycin-C, and streptozotocin. Metastatic lesions of the liver and primary pancreatic mass have responded to chemotherapy in this patient. He is presently continuing treatment. This patient's fibrinogen levels have declined progressively although the levels are still elevated. The significant drop has been noted with objective decrease in metastatic liver lesions and primary mass for a brief period. Since October 1979, his lesions have increased in size.

Patient D, a 54-year-old Japanese man with the diagnosis of unresectable adenocarcinoma of the pancreas in July 1979, had partial response to 5-fluorouracil infusion, adriamycin, mitomycin-C, and streptozotocin (Table 6). His fibrinogen levels have been in the high-normal-to-slightly-elevated range since January 1980. Unfortunately, no fibrinogen levels

Continued on page 368

TABLE 2. Fibrinogen Levels—Disease Categories

Diagnosis	No. Patients	No. Samples	Mean (mg/dl)	Range (mg/dl)	Coefficient of Variation (%)	95% Confidence* Limits of the Mean
Benign-Control	78	90	268	121-444	24.69	254-282
Hematopoietic Malignancy	18	30	440	184-960	35.84	383-446
Ca Breast-						
NED +	19	31	309	184-440	22.48	285-333
Active++	7	23	378	221-625	34.66	324-431
Ca Lung-						
NED	3	10	355	279-476	16.43	319-391
Active	12	35	488	135-870	38.43	468-508
Ca Colon-						
NED	18	33	359	221-738	32.12	320-398
Active	11	21	490	243-774	34.79	424-555
Ca Rectum-						
NED	3	5	372	268-500	27.00	284-460
Active	1	2	406	403-410	1.22	399-413
Ca Stomach-						
NED	9	18	320	226-489	22.30	287-353
Active	7	20	402	244-610	27.29	354-450
Ca Pancreas-						
NED	1	1	313	313-313	0	
Active	6	1	492	334-706	20.10	541-532
Ca Prostate-						
NED	2	2	316	260-373	25.25	205-427
Active	4	9	330	206-560	31.03	263-397
Ca Urinary Bladder						
NED	3	9	358	215-575	29.08	290-426
Active	3	7	598	400-846	30.37	464-732
Ca Ovary-						
NED	1	2	333	310-356	9.77	289-377
Active	4	13	544	384-851	23.33	475-613
TOTALS	210	384				

\*Any two groups with overlapping confidence limits are not significantly different ( $p > 0.05$ ).

+NED= No evidence of disease. ++Active= Advanced Disease

TABLE 3. Patient A, 70-year-old Male, Cancer of the Lung


Date	03/21/73	02/08/74	01/18/78	10/10/78	07/02/79	01/18/80	04/18/80	06/80
Fibrinogen mg/dl	269	278	308	404	440	484	805	Expired
								
					Lesion Discovered Here			

TABLE 4. Patient B, 65-year-old Male, Cancer of the Colon

Date	03/27/79	04/16/79	05/21/79	06/27/79	07/30/79	09/10/79	10/15/79
Fibrinogen mg/dl	390	400	276	336	394	382	469

Date	11/19/79	12/28/79	01/28/80	02/25/80	04/07/80	05/05/80	06/04/80	Expired
Fibrinogen mg/dl	508	449	593	550	657	642	631	

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were done before and serially after the diagnosis and treatment until September 1979, by which time he had shown clinical response.

Patient E, a 65-year-old Japanese woman was explored for a pelvic mass on August 1979, and found to have Stage III serous cystadenocarcinoma of the ovary (Table 7). She has been on adriamycin, cytoxan, and cis-platinum with an initial response. Since June 1980, she has shown increasing ascites and recurrence of abdominal mass. A La Veen shunt was inserted with control of the ascites. The fibrinogen levels have progressively increased with clinical progression of the disease, which may well have preceded the clinical observation of relapse.

Patient F, a 67-year-old Japanese man, had lung resection in February 1974, for bronchogenic carcinoma (Table 8). By November 1979, he had local recurrence and received radiation therapy plus combination chemotherapy consisting of cis-platinum, adriamycin, cytoxan, and procarbazine. Following this therapeutic regimen, the fibrinogen levels decreased to a low of 210 mg/dl on April 1980, with a subsequent increase in June 1980. In July 1980 a small nodule was detected in the left lower lobe suggesting recurrence.

### Discussion

Hemostatic dysfunction has been a frequent finding in patients with malignancy.<sup>2, 9, 10</sup> Soong and Miller<sup>10</sup> have studied a number of coagulation parameters in 100 patients with disseminated malignancies. These investigators found the mean fibrinogen level in the entire group to be  $524 \pm 191$  mg/dl, compared to a normal control group of  $241 \pm 51$  mg/dl. In the present study, the control group of 78 patients had a mean value of  $268 \pm 66$  mg/dl. Our control group consisted of patients with non-cancerous diseases, primarily patients who had preoperative coagulation studies. Our additional group of 59 patients who had had definitive cancer surgery and had no evidence of recurrent disease showed a mean of  $335 \pm 90$  mg/dl. Those patients with active advanced malignancy had a mean value of  $458 \pm 155$  mg/dl.

Soong and Miller<sup>10</sup> and Sun et al.<sup>8</sup> have stressed the frequent activation of the fibrinolytic systems in patients with metastatic cancer. Soong and Miller concluded that the coagulation disorders in malignancy are not localized to the tumor but indeed may be systemic in nature. Whether hemostatic abnormalities are due to widespread disease or to a more generalized process initiated by the presence of local tumor deposits is not known.

Major findings by Soong and Miller were: (1) a shortened silicone clotting

Continued on page 370

TABLE 5. Patient C, 64-year-old Male, Cancer of the Pancreas

Date	05/11/79	06/06/79	07/16/79	08/13/79	09/10/79	10/07/79	11/05/79
Fibrinogen mg/dl	567	428	342	331	342	470	556

Date	12/03/79	12/28/79	01/28/80	02/25/80	03/29/80	04/23/80	05/19/80	06/16/80
Fibrinogen mg/dl	538	633	526	500	706	510	627	469

TABLE 6. Patient D, 54-year-old Male, Cancer of the Pancreas

Date	09/12/79	10/22/79	11/19/79	12/12/79	01/14/80	02/11/80	03/17/80
Fibrinogen mg/dl	354	385	362	302	358	402	439

Date	04/21/80	06/03/80
Fibrinogen mg/dl	416	334

TABLE 7. Patient E, 65-year-old Female, Cancer of the Ovary

Date	09/17/79	10/22/79	11/17/79	01/12/80	01/21/80	03/17/80	04/14/80
Fibrinogen mg/dl	464	479	453	384	423	455	550

Date	05/10/80	06/14/80
Fibrinogen mg/dl	486	593

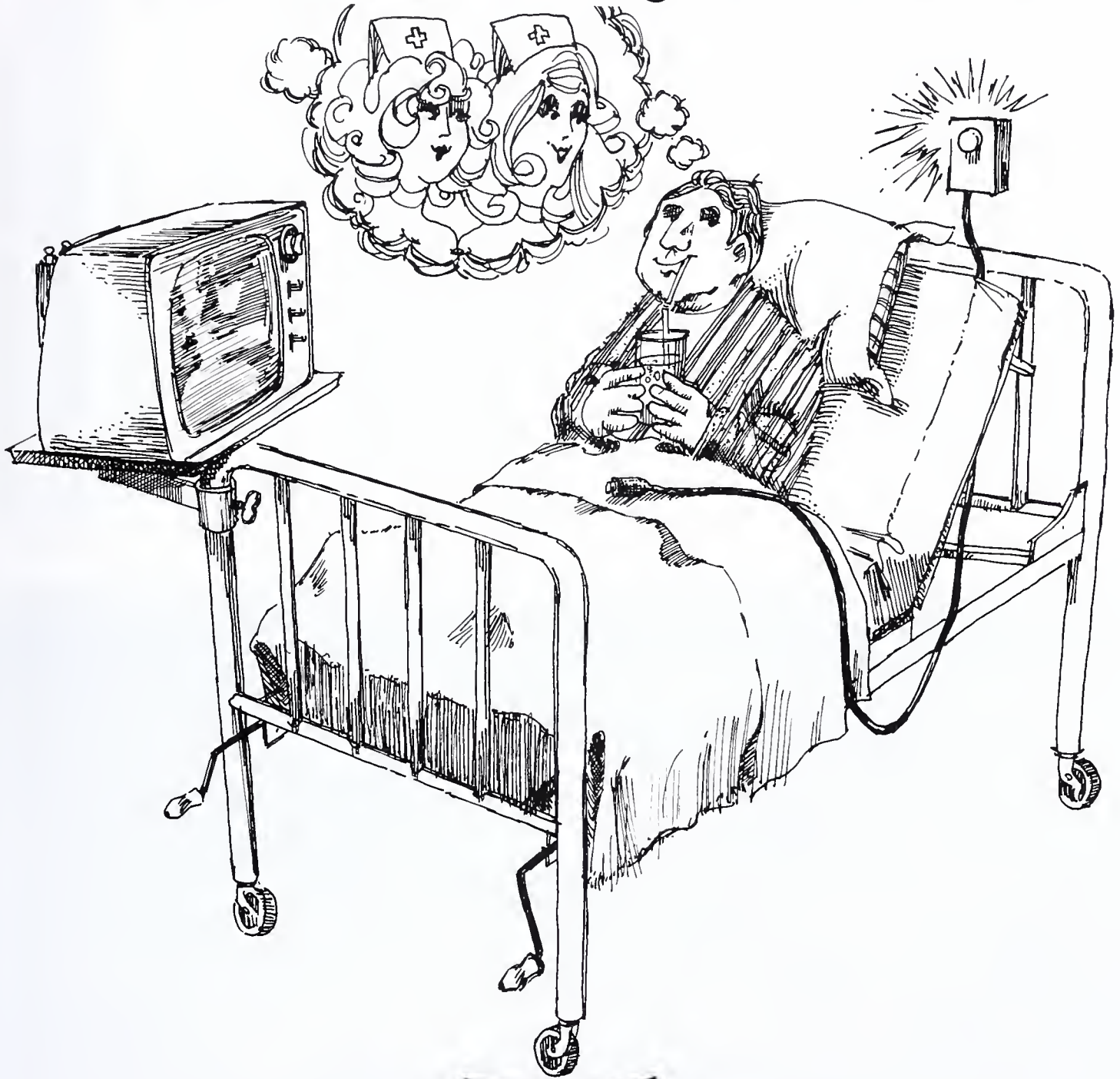
TABLE 8. Patient F, 67-year-old Male, Cancer of the Lung

Date	11/20/79	11/26/79	12/24/79	02/25/80	03/24/80	04/28/80	06/09/80
Fibrinogen mg/dl	583	504	493	470	439	210	620

Date	06/23/80	06/30/80
Fibrinogen mg/dl	502	580

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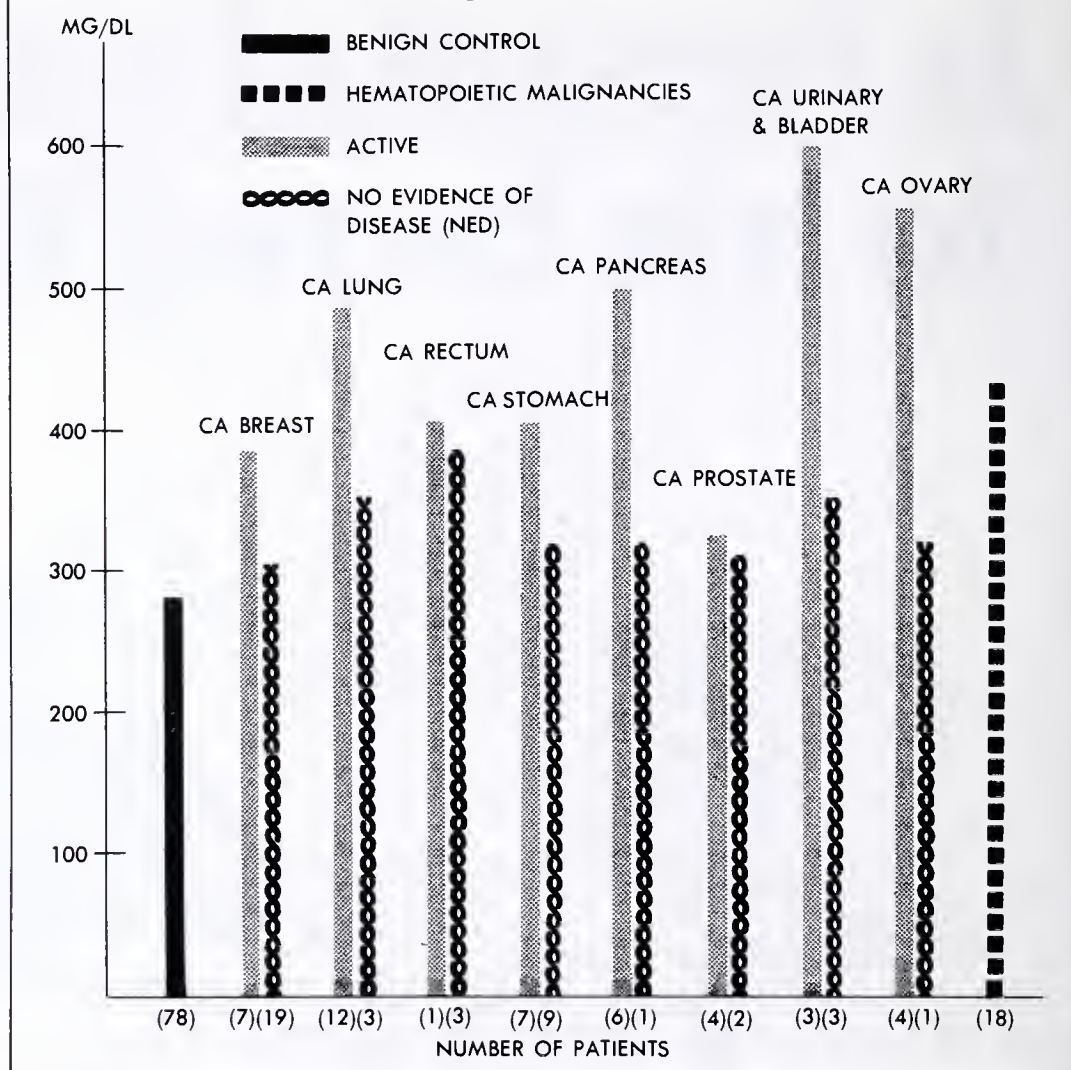
time, and (2) elevated plasma fibrinogen with diminished fibrin stabilizing factor.

Sun et al., in their study of coagulation parameters in cancer patients, found that fibrinogen abnormalities were more common in those with higher grades of malignancy and in patients with metastases. Hypofibrinogenemia was virtually limited to patients with metastases. Of 38 patients, 33 had increased fibrin split products.

Soong and Miller had found the highest mean values—583 mg/dl—in lung cancer and breast cancer patients, and the lowest 448 mg/dl, in genito-urinary carcinoma patients, although this was significantly elevated above the normal mean value of 241 mg/dl. In general, our data are in agreement with these findings. In the present study, although the numbers were small, mean values of 598 mg/dl and 544 mg/dl were obtained in 3 patients with urinary bladder carcinoma and 4 patients with ovarian carcinoma. Cancer of the pancreas (6 patients) brought a mean value of 492 mg/dl and the mean value in lung cancer's was 488 mg/dl. Lower mean values were found in breast cancer (7 patients) and prostate cancer (4 patients), 378 mg/dl and 330 mg/dl, respectively.

In all tumor types, patients who had definitive cancer surgery with no evidence of disease (NED) had lower mean fi-

FIG. 1. Fibrinogen Levels in Subset Patients



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brinogen levels.

In hematopoietic malignancies, active disease was present in all patients during the period in which fibrinogen levels were determined, consistently reflecting elevated levels, with a mean value of 440 mg/dl.

Fibrinogen levels were monitored during the course of disease and correlated with the progress of disease in 6 patients. Patient A had fibrinogen levels done up to 5 years prior to his diagnosis and the levels were normal. There was a significant increase (308 to 404) over a 10-month period, persisting during the subsequent 9 months; at that time a left upper lobe malignant mass was discovered. Because of his severe obstructive emphysema, surgery was contraindicated and treatment consisted primarily of radiotherapy. The fibrinogen levels continued to rise and 6 weeks prior to his demise he had a level of 805 mg/dl.

Patient E, with serous cystadenocarcinoma of the ovary, had incomplete resection of her tumor. She initially responded to chemotherapy and the fibrinogen level dropped from 479 mg/dl to 384 mg/dl. With subsequent progression of intra-abdominal disease, palpable masses and ascites, her most recent fibrinogen level was 593 mg/dl.

Statistical analysis was performed by determining the 95% confidence limits of the mean. Significance of groups with a  $p < 0.05$  was determined by no overlap-

ping of values. In this way, all major disease groups had 95% confidence limits, when compared to the benign-control group and when the All Cancer-NED group was compared to the All Cancer-Active group. In the analysis of the disease categories where NED is compared to active disease, 95% confidence limits were seen in cancers of the lung, colon, stomach, bladder, and ovary, (although in some of the disease categories of lung-NED, bladder and ovary, the numbers were small).

Although lower levels of fibrinogen in advanced disease may be related to increased breakdown to fibrinopeptides due to activation of the fibrinolytic system, in this limited study fibrinogen levels appear to represent activity of the advanced disease. Furthermore, the fibrinogen levels seem to correlate with response to therapy. Fibrinogen has a half-life of 3 to 4.5 days with a catabolic rate of 31-46 mg/kg/day in normal subjects.<sup>11, 12, 13, 14, 15, 16</sup>

Albeit fibrinogen is heterogeneous and forms resistant to catabolism may be produced in cancer patients, the half-life is short and these levels found in plasma are conceived to be a reflection of stimulation of the production of fibrinogen by the liver.

#### ACKNOWLEDGMENT

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# Adolescents in Residential Treatment, Hawaii, 1973-1978

Valerie Brandon, M.D., Honolulu

*The Salvation Army Residential Treatment Facilities for Children and Youth (SARTFCY) on Oahu is a nationally-accredited (JCAH-accredited) psychiatric residential treatment program. Separate residential cottages house three groups of youngsters; boys, ages 7 to 12 years; adolescent boys, 13 to 17 years; and teen-aged girls, 13 to 17 years.*

Youngsters admitted to the Salvation Army Facilities have moderate to severe emotional or behavioral problems. Reasons for referral include: severe management problem at home (67%); severe management problem at school (35%); and law violations (43%). Table 1 gives details and percentages of presenting symptomatology.

TABLE 1: Presenting problems

1. Poor self control	97%
2. Poor self-image	78%
3. Poor relationship with parents	67%
4. Temper tantrums	58%
5. Stealing	56%
6. Depression	50%
7. Runaway	49%
8. Use of drugs	44%
9. Destructive behavior	40%
10. Assaultive behavior	36%
11. Manipulative behavior	35%
12. Burglary	35%
13. Truancy	33%
14. Other	30%
15. Lying	27%
16. Heterosexual acting-out	21%
17. Bullying	18%
18. Shoplifting	16%
19. Vulgar language	16%
20. Poor peer relationships	16%
21. Suicide gesture	15%
22. Withdrawn, shy behavior	15%
23. Hyperactive behavior	15%
24. Inappropriate affect	11%
25. Homosexual acting-out	8%
26. Provocative behavior	6%
27. Suspicious, mistrustful	6%
28. Enuresis	4%
29. Fantasizes	1.7%
30. Soiling	0.8%

Residential treatment is a highly developed and involved process, with 24-hour care, supervision, and therapy. Psychoso-

cial and re-educative residential treatment offers an integrated treatment plan, covering all areas of a young person's life—"a whole world for the person to become whole in."

The various program components at the Salvation Army facilities are designed to provide specific daily living experiences to stimulate and nurture all of the innate growth potentials of the youngster's—cognitive, affective, spiritual, and physical. Significant changes in a youngster's behavior may be expected within 12 to 24 months.

## Method

This paper will describe and analyze some demographic characteristics of the youngsters at SARTFCY in a 5-year period.

From 1973 to 1978, there were 116 admissions at the Salvation Army facility. Data were obtained by chart review. A form was completed on each youngster, addressing more than 70 items of information (Table 2). Data items were numbered, coded, and converted into a computer format. Only statistically significant information will be related in the following discussion.

## Results

### Sex Distribution

Of the 116 cases studied, 69 (60%) were boys and 47 (40%) were girls.

In a similar study by Waldron and Mann at Leahi Hospital's Children's Mental Health Unit during the same years, 1973 to 1978,<sup>1</sup> they found an even greater proportion of boys to girls. Of their 179 cases, 79% were boys and 21% were girls. These sex ratios of hospitalized children compare closely with the national trend in emotional disturbance in children: in severe conduct disorders, boys outnumber girls 12:1; in develop-

mental disorders, boys outnumber girls 2:1 or 3:1.

### Presenting Problems by Sex

Presenting problems were analyzed by sex, with significant differences in the types of presenting symptoms for boys compared to girls. Boys had much higher percentages in the areas of assaultiveness, destructiveness, burglary, truancy, and hyperactivity. On the other hand, girls had much higher percentages in heterosexual acting-out, homosexual acting-out, depression, suicide gestures, and shoplifting. It is of note that there were no significant ethnic differences in the types of presenting symptomatology.

### Ethnicity

The ethnic backgrounds considered in this study were: Caucasian, Japanese, Chinese, Filipino, Korean, Puerto Rican, Portuguese, Black, Samoan, part-Hawaiian-Cosmopolitan, and non-part-Hawaiian-Cosmopolitan.

(There were no pure Hawaiians, but a large number of part-Hawaiian and cosmopolitan youngsters were represented in this study. For this reason the additional categories of Cosmopolitan part-Hawaiian and Cosmopolitan non-part-Hawaiian were used.) Table 3 shows the absolute numbers and percentages of ethnic groups represented at the Salvation Army and Leahi Hospital<sup>1</sup> compared with the percentage of that ethnic group in the state. An over-representation of both Cosmopolitan-part-Hawaiians and Cosmopolitan-non-part-Hawaiians is seen, compared with their percentage in the state. By contrast, Caucasians seem to have been fairly equally represented. There was a marked under-representation of Filipino and Japanese groups. The Japanese under-representation was the most remarkable, with a state percentage of 26.2%, but with only 0.8% in residential treatment. Several groups were entirely absent: Chinese, Korean, and pure Hawaiian.

*Continued on page 374*

The future is calling.





## Discussion

These differences may be explained by some cultural comments from "People and Cultures of Hawaii:"<sup>22</sup>

**Japanese:** Prior to 1950, shame incurred by a Japanese person would affect the entire Japanese community in Hawaii. A newspaper account of a Japanese youngster in trouble with the police would cause supper to be late in many homes while fathers thundered about shame. The number of psychotic Japanese patients brought to the various clinical facilities has been less than expected on a population basis, but their symptoms have been correspondingly more advanced and severe and their subsequent hospitalizations longer. It can be assumed that Japanese families maintain at home, untreated, many persons with highly disruptive symptoms, partly because of the shame involved in exposure of the problem by seeking help. In a study conducted by Choy<sup>3</sup> during 1979, it was found that Japanese adolescents were significantly under-represented in the Adolescent Psychiatric Unit at Hawaii State Hospital.

**Filipinos:** Filipinos accept and tolerate "abnormal" behavior. In fact, Filipinos may have difficulty recognizing and acknowledging emotional factors as a basis of problems. For them, it is easier to present "a touch of the flu" or a "headache" or a "punishment from God" rather than depression.

**Chinese:** There is a traditional Chinese cultural ban against open and direct expression of aggressive and negative feelings. Traditional Chinese culture tends to foster repression and suppression of unacceptable thoughts and feelings; thus, Chinese tend to somatize their emotional conflicts. According to police records from 1925 to 1940, the number of Chinese charged and convicted with violent crimes was disproportionately smaller than those of the other races. The general impression is that as a group, the Chinese are still a law-abiding people.

TABLE 2—Information Items Sought

1. Age	39. Mother remarried
2. Months in program	40. Age of child when mother remarried
3. Sex	41. Father remarried
4. Birthplace	42. Age of child when father remarried
5. Years in Hawaii	43. Child lives with
6. Ethnicity	44. Interaction with father
7. Religion	45. Relationship with father
8. Grade in school	46. Father's ability to handle child
9. School district	47. Interaction with mother
10. Age of father	48. Relationship with mother
11. Age of mother	49. Mother's ability to handle child
12. Occupation of father	50. Child's interaction with siblings
13. Occupation of mother	51. Child's relationship with siblings
14. Stepfather's age	52. Child's age at time of adoption
15. Stepmother's age	53. Specific developmental problems
16. Stepfather's occupation	54. Developmental milestones
17. Stepmother's occupation	55. Abnormal developmental milestones
18. Number of siblings	56. Special problems
19. Referring agency	57. Interaction with adults
20. Reason for referral	58. Interaction with peers
21. Presenting problems	59. Involved in organized activities
22. Major problem	60. Male/female relationships
23. Age of onset	61. Last grade
24. Duration	62. School attendance
25. Influencing factors	63. School performance
26. Reason for requesting treatment	64. Special problems in school
27. Prior living, arrangements	65. Relationship with teachers
28. Past placements	66. Planned discharge
29. Zip code	67. Improvement at discharge
30. Living conditions	68. Discharge diagnosis
31. Problems in the home	69. Second diagnosis
32. Socio-economic status	70. Unplanned discharge, reasons
33. Source of income	71. Disposition
34. Father's work situation	72. I.Q. scores
35. Mother's work situation	73. Siblings have problems
36. Parental relationship	74. Siblings placed at SARTFCY
37. Parents divorced	
38. Age of child when divorced	

**Hawaiians:** There are probably fewer than 3,000 pure Hawaiians in the state of Hawaii. This small number may account for their non-representation in the study. Most Hawaiians today are offspring of intermarriages. This brings us to our Cosmopolitan-part-Hawaiian group which comprises 16.4% of the total population of the state and 41% of admissions to Sal-

vation Army. There may be a disproportionate number of poor and dispossessed among the Hawaiians. The largest proportion of high school dropouts, the greatest number of those on the welfare rolls, the highest rate of crime are to be found among the Hawaiians.

### Age at Time of Admission

Boys presented for admission at a younger age than did girls. The mean age for boys was 13.1 and the mean for girls was 14.5. The spread of ages of boys at the time of admission was from 8 to 17 years and that for girls was 12 to 17 years.

There is no facility for younger girls at Salvation Army. However, administrators of SARTFCY have stated that there has never been a need or a demand to provide services for pre-adolescent girls.

### Onset

Tied in with age at admission is the estimated age of onset of psychological dysfunction. This was significantly different between boys and girls. For boys, 38% were considered to have onset between 5 to 6 years of age, whereas for girls 55%

TABLE 3 Ethnic Distribution

	Actual #	%	%	%
Cosmopolitan-Part-Hawaiian	48	41	16.4	23.8
Caucasian	37	32	29.8	45
Cosmopolitan-Non-Part-Hawaiian	17	15	9.2	19
Filipino	3	2.5	10.1	0.6
Portuguese	3	2.5	unknown	0
Black	3	2.5	1.2	4
Puerto Rican	2	1.5	0.4	0.6
Samoan	2	1.5	0.5	1.2
Japanese	1	0.8	26.6	3.5
Chinese	0	0	4.3	2.5
Korean	0	0	1.3	0.6
Pure Hawaiian	0	0	<1	0

Continued on page 376

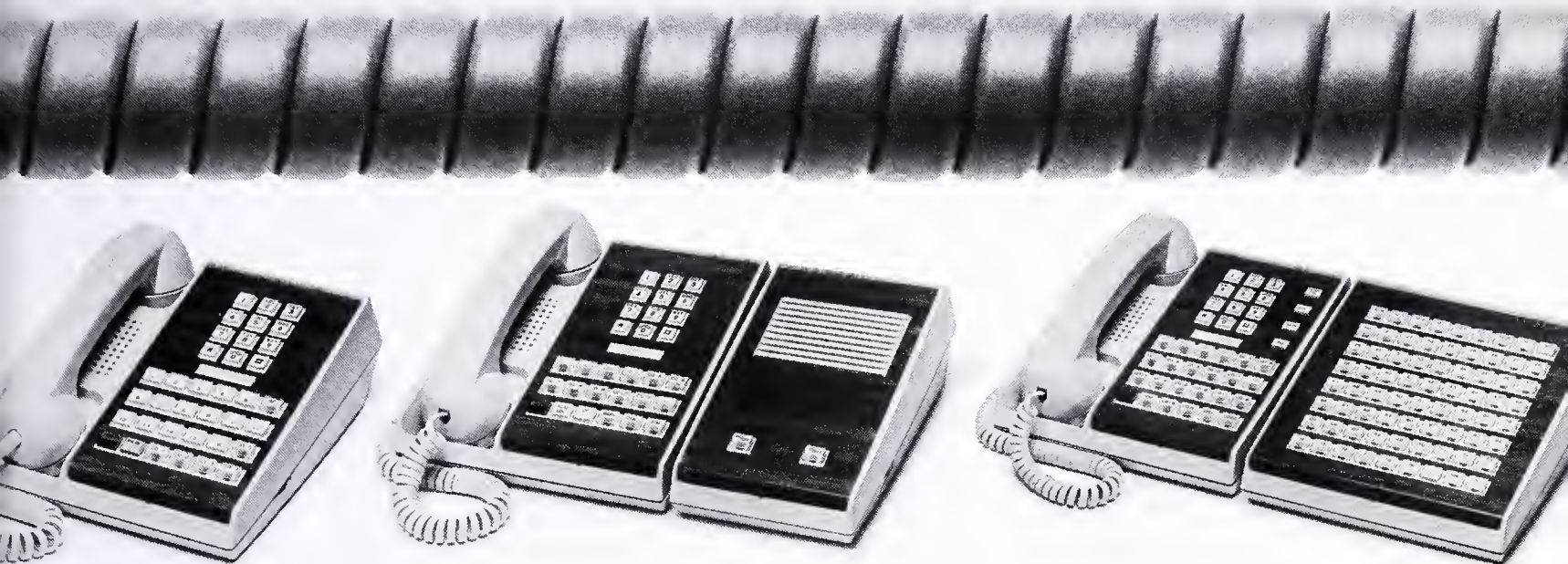


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were considered to have onset between 12 and 13 years. These peaks correspond with the age of entrance to elementary school for boys and the age of puberty for girls.

#### Duration

Duration of problems prior to admission was also significantly different. For girls, durations were shorter: 70% of females were considered to have a duration of 0 to 3 years, whereas 68% of males had a reported duration of 4 to 12 years prior to admission.

#### Demographic Data

As to birthplace, 54% were born in Hawaii; 39% on the Mainland; and 6% were born elsewhere.

As to religion, 35% were listed as Catholic; 25% as Protestant; 4% as Buddhist; 1% as "Other"; and the religion of 33% was unknown.

As to referring agency, Family Court accounted for 45%; D.S.S.H., 22%; Tripler-Child Guidance, 5%; Leahi, 4%; Kapiolani Child Guidance, 3%; Hickam, 1%; Department of Education, 3%; Mental Health Centers, 3%; "Other" 13%; and 1% were self-referred.

As to family structure, 53% of parents were divorced.

Regarding father's occupation, 37 fathers were missing to the extent that no information on occupation was known; 30 were blue collar workers; 19 were serving in the military; 11 were white collar workers; 4 were unemployed; 6 were retired; 9 were deceased; and there were stepfathers, of whom 12 were in the military.

Mother's occupation was as follows: 18 were missing to the extent that no information on occupation was known; 57 were housewives; 11 were blue collar workers; 22 were white collar workers; 2 were unemployed; 4 were deceased; 2 were listed as "other"; and there were 4 stepmothers in the group.

Previous placements for the children had been detention home, 50%; foster homes, 26%; emergency shelter, 26%; Leahi or State Hospital, 15%; group home, 8%; relatives, 7%; and prior Salvation Army placement, 4%. Prior to admission, children had lived with both parents, 43%; mother, 25%; father, 9%; foster parents, 10%; relatives, 4%; and "other," 7%.

A total of 5 of the youngsters were adopted. About 17% had siblings with behavioral problems, and 9% had a sibling who had been at SARTFCY.

As to school performance, 73% had irregular or absent school attendance; 76% had poor school performance; 22% had repeated grades; and 70% had IQ scores under 100.

Diagnoses were depression, 21%; adjustment reaction of adolescence, 13%; unsocialized aggressive reaction, 12%;

group delinquent reaction, 10%; runaway reaction, 5%; anxiety, 2.5%; and hyperkinetic reaction, 2.5%.

With respect to discharges from SARTFCY, 60% had unplanned discharges, and 40% had planned discharges. Of the unplanned discharges 49 (42%) were runaways.

About 60% were considered to have improved condition at discharge. In some cases, improvement had occurred even though discharge had been unplanned. Of Caucasian boys, 92% were considered to have improved at the time of discharge and, in fact, comprised the most improved group. Only 12% of part-Hawaiian girls were considered to have improved condition at the time of discharge and comprised the least improved group.

#### Summary and Conclusion

Data were gathered on 116 youngsters admitted to the Oahu Salvation Army Treatment Facilities for Children and Youth from 1973 to 1978. Patterns in sex distribution, ethnicity, and age of admission and of onset were consistent with other studies:

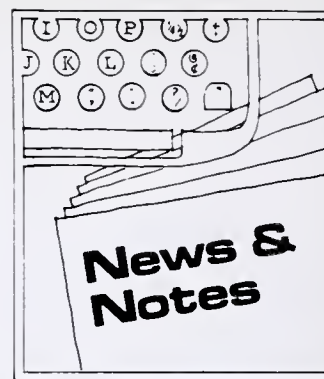
- 1— More boys than girls required residential treatment.
- 2— Japanese, Filipinos, and Chinese were under-represented.
- 3— Part-Hawaiian-Cosmopolitan and non-Part-Hawaiian-Cosmopolitan groups were both over-represented.
- 4— Boys tend to present for admission at earlier age than girls.
- 5— Boys tend to have earlier onset of symptoms and consequently longer duration of problem behavior.
- 6— Boys' symptomatology tends to be of a more aggressive nature, whereas girls' presenting problems tend to have more sexual and depressive qualities.
- 7— Family support systems of these youngsters have been less than adequate. Poor school performance has been seen in a high percentage of cases.

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#### ACKNOWLEDGMENTS

Special acknowledgment to Dennis McLaughlin, Ph.D., for computer processing. Special thanks to William Bolman, M.D., and Wilmer Cozens, Ph.D., who provided guidelines for this study.



Henry Yokoyama, M.D.

## Oncology Conference

A 24-year-old man had a left chest mass which, on needle biopsy, was regarded as a germ cell tumor. Moderator Glenn Kokame pondered the question whether the tumor should be treated first with chemotherapy or surgery . . . Chemotherapists Kevin Loh and Jeff Nakamura agreed that if it was germ cell ca. then chemotherapy should precede surgery. Ron Perry described the horrors of his own case of germ cell tumor where thoracotomy was done first; the patient got phrenic nerve paralysis, post-op respiratory distress, and new lesions in the other chest cavity within a short period . . . Noting that radiotherapist Carl Boyer was unusually quiet, Glenn asked, "Anyone disagree? How about you, Carl?" Carl appeared to be thinking, "No, Sorry about that . . ."

\* \* \*

A 59-year-old woman had radical breast surgery in 1971. Last year, a D&C showed endometrial ca. More recently she had GI symptoms, and an UGI and EGD confirmed a duodenal tumor, metastatic from the ovary. She had exploration and a bypass gastrojejunostomy. At surgery she had metastatic nodules in the liver, large bowel, spleen, and mesentery. The patient's mother had died of ovarian ca., her father of esophageal ca., and a sister of ca.

Moderator Glenn Kokame asked Pathologist Larry McCarthy, "Is it unusual to have a woman with cancer of all her genital organs?" Larry: "Well, with a family history like that, probably not . . ." Pathologist Grant Stemmerman added, "All these tumors in one person is unusual . . . She is also at high risk for colon ca. . . ." After being prodded by Moderator Kokame, Radiotherapist Carl Boyer responded, "Got nothing to say . . . But radiotherapy would be strictly palliative in a case like this . . . She already has had chemotherapy, so abdominal radiation would simply knock out her bone marrow . . ."

\* \* \*

## Limerick

There was an old man of Lyme  
Who married three wives at a time,  
When asked, "Why a third?"  
He replied, "One's absurd!  
And bigamy, sir, is a crime."

Author unknown



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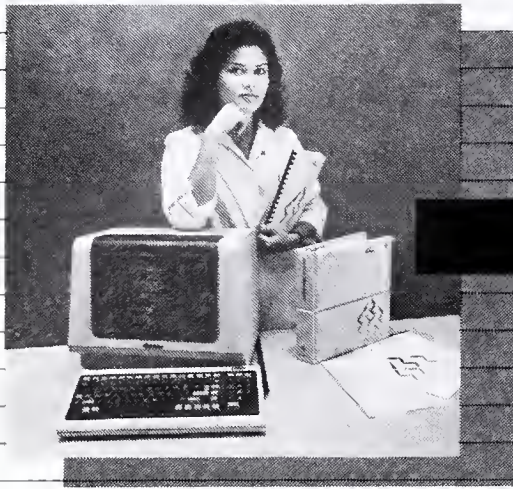
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Editor:

During my years as a general practitioner on Kauai, I always enjoyed the bits of humor found in the HAWAII MEDICAL JOURNAL. Since leaving the Islands and joining the faculty of the University of Texas Medical School, I have had some amusing things happen to me. I would like to share them with my colleagues in Hawaii.

Wm. J. McLaughlin, M.D.  
Assistant Professor  
University of Texas

Health Science Center at Houston  
Dept. of Family Practice

To wit:

One attribute of the "complete physician" which I have never seen referred to in the literature is the ability not to laugh. I'm talking about the funny situations that arise during the practice of medicine which if laughed at would incur resentment, embarrassment, hostility, or other unwanted reactions in the patient. For instance, a middle-aged man entered my office looking extremely sorrowful and dejected, slow-moving, depressed, almost cataleptic. His opening statement to me was "Doc, I feel lower than a centipede with fallen arches." The sentence immediately provoked a ridiculously clear mental image which under normal circumstances would have had me bent over. My ability to remain stoic saved me from a touchy situation. I can well imagine the poor man's reaction had I gone into a belly laugh at what was, to his way of thinking, a very serious and highly descriptive statement of just precisely how he felt.

One must not laugh either when a patient thinks he or she is letting the doctor in on some privy information. Not long ago one of the caretakers from the animal laboratories came into the clinic to have a scratch on the hand treated. During the course of his care I casually asked what kind of animals he cared for in the lab. He told me "... Well Doc, they calls 'em mammals over there but ... (lowering his voice almost to a whisper of strict confidence) they's really monkeys."

Don't ever laugh, either, when a patient asks a serious question. A patient recently consulted me because she inadvertently got some tissue culture liquid in her eye while cleaning a laboratory table. She had no idea what type of culture it was and I explained to her that it was vital that I have that information. It took me a while to convince her of the necessity of

HAWAII MEDICAL JOURNAL



this, since she would have to take a long hike in the hot Texas sun to find out. With reluctance she started on the journey. She returned later and informed me that the culture was a non-inoculated benign German hamster leucocyte culture. As I was writing this information down in her chart the patient asked me in a doubtful yet inquisitive voice—"Doc, how do they *really* know those hamsters are Germans?"

Another situation in which consultation room laughter is contraindicated is when the patient is relating a particularly worrisome symptom. One man told me each time he gets a "real bad sore throat," his tonsils drop down in his neck and he can feel them "just like two golf balls sitting one on each side." Nor can you laugh at silly answers. I had seen a patient the previous afternoon for what was described as a very severe back pain and had prescribed medicine for its relief. I asked the patient whether the medicine relieved the pain and was told, "I don't know because I took the medicine at bedtime and fell asleep so I don't know whether the pain was still there or not."

One must be particularly on guard against uncontrolled laughter when reviewing history questionnaires in the patient's presence. What seasoned practitioner hasn't discovered inappropriate responses after the "SEX" inquiry on the history form; instead of "male" or "female" one sees such responses as "rarely," "never," "occasionally." One of the questions on our forms is "Do you consider your diet to be well balanced?" One patient answered, "Most meals balance pretty good but hamburgers and onions sometimes sit kind of heavy on me." To the question, "Do you have a discharge from your penis?", one woman wrote "sometimes." A man answered the question, "Do you smoke?" with, "Yes, twice a year . . . Xmas and New Year's Eve"; another answered, "One pack a day . . . no more . . . no less!" A rather shy young girl replied to the question, "Would you desire any birth control (contraceptive) information?" with . . . "Maybe."

One question asks "In your work do you have to climb higher than 8 feet above the ground?"—to which a patient responded, "Yes, every day, but I always take the elevator." To the question, "Do you have any concerns with reference to alcohol?" one fellow answered, "Not yet," while another one said, "Only in Texas." One response that almost caused me to lose composure was the answer to the inquiry, "Do you perform self-examination of your testicles?" Answer, "No need! My girlfriend does it weekly and I trust her judgment completely!"

Yes, it's fun to enjoy a good belly laugh at the lighter side of our serious and very demanding profession, but it has been determined that at times consultation room chuckling can be hazardous to your professional health.

◇

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**"Bendectin Brouhaha"**

Edwin Feulner, of the Heritage Foundation, Washington, D.C., has written recently about the "Bendectin Brouhaha," to wit:

"The Cincinnati post office has been especially busy . . . handling thousands of letters from doctors and their patients to . . . Merrell Dow Pharmaceuticals.

"The letters are generally of a complaining nature—about the company's decision to discontinue production of Bendectin, the only drug known to be effective against the nausea and vomiting associated with morning sickness . . .

"Bendectin has been on the market for 27 years. During that time, an estimated 33 million women have used the drug on the advice of their physicians. No other drug is quite as effective as Bendectin; no other drug has been prescribed as long as Bendectin; no other drug has been as thoroughly tested as Bendectin; and no other drug has been the subject of as much controversy as Bendectin.

"At issue is whether the use of Bendectin during early pregnancy causes birth defects. This is obviously a very emotional subject; and all of our hearts must go out to those families who must contend with such a tragic event. But should Bendectin be made a scapegoat?

"The overwhelming weight of evidence—including nearly three decades of prescribed use—indicates that Bendectin is perfectly safe if used as directed. The drug has been approved by the U.S. Food and Drug Administration and by similar regulatory bodies in Australia, Canada, Germany, Great Britain, Switzerland, and other countries. The World Health Organization has given Bendectin a clean bill of health. And recent studies published in the prestigious *New England Journal of Medicine* and the specialized medical journal, *Teratology*, say that fears about the safety of Bendectin are unfounded.

"So why did the company pull the product off the market?

"As *The Wall Street Journal* noted in an editorial, Bendectin has been 'the victim of misleading articles in the press and of litigiousness run amok.' Merrell Dow is the defendant in more than 300 lawsuits alleging Bendectin caused birth defects; despite a mountain of evidence in the company's favor, a Maryland jury recently awarded a family \$750,000 in a lawsuit against the company. (The decision is being appealed).

"It has reached the point, according to Merrell Dow President David Sharrock, where the company was spending \$10 million a year for liability insurance for Bendectin. Total revenues from U.S. sales of the drug: only \$13 million. Add in the company's legal costs, and Bendectin had become a liability.

"Of course the big losers in the deci-

sion are the people who need Bendectin. According to the American College of Obstetricians and Gynecologists: The decision by Merrell Dow creates a significant therapeutic gap. Nausea and vomiting in pregnancy cannot always be treated by symptomatic means, and in the past years severe cases have led to serious maternal nutritional as well as other deficiencies.

"It is understandable, as *The Wall Street Journal* noted in its editorial, that the parents of babies with birth defects would be greatly distressed, and want to find a reason for the trauma they are facing. And understandable, too, that juries might sympathize with their plight. But there's something terribly askew with a legal system that cannot distinguish between a (drug like) thalidomide and Bendectin—one known to cause birth defects and the other considered perfectly safe."

Feulner is president of The Heritage Foundation, a Washington-based public policy research institute.

\* \* \*

**Bendectin & Pyloric Stenosis**

Then there's the word in the Food and Drug Administration "Drug Bulletin" of August 1983 (Vol. 13 No. 2) entitled, "Bendectin and Pyloric Stenosis," quoting "a recently published case-control study (reporting) an association between the use of Bendectin . . . and the occurrence of pyloric stenosis in infants." Reference was made to an article in the *American Journal of Ob-Gyn* v. 144: 919-924, by B. Eskenazi, and M. Bracken, entitled, "Bendectin vs. a risk factor for pyloric stenosis."

The FDA Bulletin goes on to say that "preliminary findings from an unpublished cohort study support this association, while data from a large case-control study do not.

"In assessing the evidence, it is important to recognize that evidence of an association between maternal drug use and pyloric stenosis in infants would not necessarily constitute evidence of a causal relationship. The nausea and vomiting of pregnancy itself, or its underlying cause, might be responsible for an observed increase in risk. Moreover, a number of nondrug factors have been identified as possibly associated with pyloric stenosis.

"Nevertheless, the reported association between pyloric stenosis and Bendectin use is of concern because it represents the first observation of a possible adverse fetal effect of Bendectin that has been reported from more than one study.

"FDA considers the three reports described below to represent the best available data.

"1. In 1982, Eskenazi and Bracken reported a Connecticut-based case-control study. Women who were exposed to drugs other than Bendectin were excluded from analysis. Among the 35

women who gave birth to children who developed pyloric stenosis, 6 had used Bendectin during pregnancy. Among 1,712 mothers who developed normal infants, 78 had used Bendectin during pregnancy. This was thus a fourfold increase in pyloric stenosis among infants born to mothers who had used Bendectin, and no other drugs, during pregnancy.

"2. The Boston Collaborative Drug Surveillance Program recently reported to FDA preliminary results of a cohort study that also found an association between Bendectin exposure during the first trimester of pregnancy and the development of pyloric stenosis in infants. The reported increase in risk was 2.7-fold, a finding consistent with the Eskenazi and Bracken study. Preliminary results from this study suggest increasing risk with increasing numbers of prescriptions.

"3. Mitchell and co-workers recently presented the findings of a case-control study conducted by the Drug Epidemiology Unit of Boston University. This study, representing by far the largest available data base, compared Bendectin use among the mothers of 325 infants with pyloric stenosis to its use in mothers of 3,153 infants with other malformations. No association between the use of Bendectin during pregnancy and the development of pyloric stenosis was found.

"Available data thus do not provide a definitive answer regarding an association of Bendectin use and pyloric stenosis, and even if an association is accepted, a casual relationship cannot be presumed. Pyloric stenosis is a treatable lesion but often requires a surgical procedure. Certainly, in deciding whether to use Bendectin—or any other drug—during pregnancy, both the physician and patient should consider that the nausea and vomiting of pregnancy are usually self-limited and can usually be managed without the use of any drug. Although serious dehydration and prolonged poor food intake might have adverse effects on mother and fetus, serious consequences of nausea and vomiting in pregnancy appear to be relatively rare. When the physician and patient are considering drug treatment, it is critical not only to consider available information on Bendectin, but also to recognize that, among the available antiemetic and antinauseant drug products, Bendectin has been the most thoroughly evaluated and examined for potential teratogenic risks. Other drugs not so well studied should not be presumed free of risk.

"Merrell-Dow's decision to stop the manufacture and distribution of Bendectin has reduced, or shortly will reduce, the treatment choices available to the pregnant patient with nausea and vomiting."

In an effort to explore alternative approaches and risks, FDA plans a meeting of its Fertility and Maternal Health Drugs Advisory Committee.





Charles S. Judd Jr., M.D.

# Medical Libraries in Hawaii

The Hawaii Medical Library had its beginnings in 1913 under the chairmanship of Dr. A.F. Jackson. In the following year, Governor Lucius Pinkham designated space for the library in a building known as the "Bungalow" on the grounds of Iolani Palace. Contributions from the collections of Drs. John S. McGrew and Hugo Stangenwald formed the bulk of a small collection of books. In 1916, the collection was moved to Queen's Hospital, and, in 1922, to a room in the Public Library building. By 1925, the collection had grown to 732 volumes and was back at Queen's Hospital. In 1932, its annual budget was \$1,500, and a librarian was employed for four hours a day.

Mrs. Charles R. Adams, in memory of her husband, Dr. Adams, donated \$20,000 for the construction of a new library, and this was built in 1940 as part of the Mabel L. Smyth Building. With

proper housing, the library flourished. In 1944, an endowment fund was established by several doctors, including Nathaniel M. Benyas, Francis J. Halford, Rogers Lec Hill, Henry C. Gotshalk, and Paul Withington. This rapidly increased to \$50,000 within 2 years.

In the early 1960s, a new building, designed by Vladimir Ossipoff, was created on the grounds of Queen's Hospital. The collection continued to grow, and subscriptions to journals numbered over 600. Use of the building was opened to house officers, medical students, nurses, and adjuvant health personnel as well as physicians.

Smaller libraries have been developed as part of hospital efforts in various locales, and by the University of Hawaii. The Hastings H. Walker Library in Leahi Hospital has an unusually good historical collection given by Dr. Walker, for whom the library is named, and by the late Dr.

Frederick L. Reichert. Tripler General Hospital has a fine medical collection as does the Hamilton Library on the campus of the University of Hawaii. The latter serves the School of Medicine and other health schools.

Through the efforts of Clyde Winters, a librarian, an excellent union list had been created. It carries the titles of various journals in the several libraries of Hawaii, and inter-library loans make journals available to an investigator asking for references at any one of the several libraries. MEDLINE, a computer-communication service, provides access to material in the National Library of Medicine, Bethesda, Md., and its branches.



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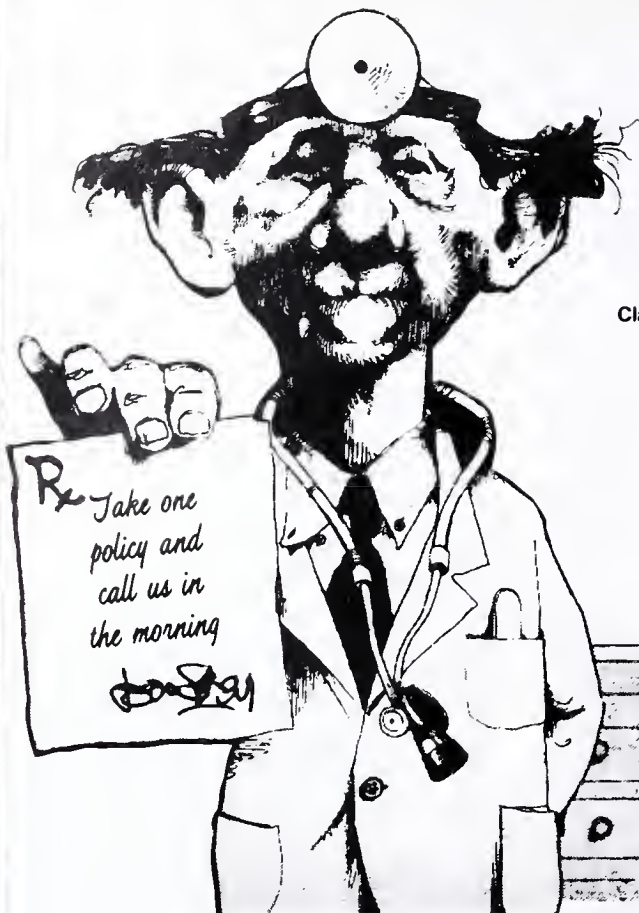


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## Over the Editor's Desk

Harry L. Arnold Jr., M.D.

Word lovers, take note: A Treasury for Word Lovers, by Morton S. Freeman, was published in September by ISI Press at \$14.95 (paper) or \$19.95 (cloth). He's the author of The Grammatical Lawyer (1979).

\* \* \*

Advanced Technology Laboratories announces a 7.5 MHz 1-4-cm focal length scanhead for pediatric applications, for \$8,500.

\* \* \*

A compact folding foot-holder-downer to make bent-leg sit-ups easier to do is available for \$6.99 postpaid first class from The Research Advantage, 8 Westerly Way, Binghamton, N.Y. 13903. It's about as bulky as a letter.

\* \* \*

Eleven strategies for preventing child abuse are summarized and evaluated in a booklet available from the NCPA, 332 S. Michigan Avenue, Chicago, Ill. 60604, for \$2. The four booklets containing the full report cost \$15 each, or \$50 for the entire set including the "overview."

\* \* \*

A shirt-pocket-size microcassette recorder that can record ECG data for 15, 30, 60, or 120 seconds every 15, 30, 60, or 120 minutes and play it back on any ECG system, together with voice annotation of patient comments; ask Brentwood Instruments, 2909 Oregon Court, Torrance, Calif. 90503, about it. It's the EZ Scan 100.

\* \* \*

A disposable 4-tined ECG electrode for attachment to fetal scalp skin is offered by Kontron Medical Instruments, 98 Plymouth St., Everett, Mass. 02149, at \$4.60 apiece.

\* \* \*

Medical Control and Accountability in Emergency Medical Services is to be the theme of an AMA/AHA-sponsored two-day seminar at the Marriott Hotel in downtown Chicago.

\* \* \*

Panhematin (hemin for injection) for attacks of acute intermittent porphyria (not

HAWAII MEDICAL JOURNAL

for porphyria cutanea tarda) is announced by Abbott.

\* \* \*

Lipton and Mayo (*J. Am. Dietetic Assn.*, August 1983) say that the success rate with the additive-free diet for controlling hyperactivity in children is closer to 1.5% or less than to the 75% claimed for it; its effect is purely psychological, they claim.

\* \* \*

A lightweight synthetic casting material, Proset, has completed clinical trials and is now FDA approved; ask Isopedix—or William McMaster, M.D., at U.C. Irvine Medical School—about it.

\* \* \*

Could you use an angled atraumatic cervical tenaculum? Amko, 41 Oak Ave., Bellmawr, N.J. 08031, offers one.

\* \* \*

Phillips Ultrasound has added quantification capability to its SDC 4000 echocardiography system by adding a special overlay scan converter which permits updating as well as retrofitting. If you don't understand that any better than we do you probably wouldn't be interested.

\* \* \*

For release on July 8: Ronald Hochuli has joined the international consulting firm of Bishop Baldwin Rewald Dillingham & Wong in its investment banking division. Hurry, hurry, hurry! Glad we didn't get this notice in time!

\* \* \*

Have you a patient whose voice cannot be heard? Ask Park Surgical Co. at 5001 Utrecht Ave., Brooklyn, N.Y. 11219, about their new Park MK10 Speech Amplifier (\$225 with headset, \$195 with hand-held microphone).

\* \* \*

Would you like to be able to get a blood digoxin level in 22 minutes? You can do it with Medical & Scientific Designs' new Phase II Digoxin Radioimmuno-assay kit. Ask Katherine Younger of that firm at 273 Weymouth St., Rockland, Mass. 02370 or call 1 (800) 343-4426.

\* \* \*

The 37th World Health Assembly of WHO, in Geneva, Switzerland, May 9-12, 1984, will feature a tremendous exhibit of new high-tech equipment for hospitals, pharmacies, laboratories, and offices—radiological, imaging, infection control, computing, et cetera. Sounds "worth a detour," as the Guide Michelin says.

\* \* \*

GE offers a new "Duo Bright" X-ray film illuminator; their Publication 5536 tells all about it.

\* \* \*

Continued on page 384

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	Average No Copies Each Issue During Preceding 12 Months	Single Issue Nearest Filing Date Nov '83
A. Total No. Copies Printed (Net Press Run)	2,057	2,000
B. Paid Circulation		
1. Sales through Dealers & Carriers, Street Vendors and Counter Sales	52	0
2. Mail Subscriptions	1,253	1,340
C. Total Paid Circulation	1,305	1,340
D. Free distribution by mail, carrier or other means, samples, complimentary & other free copies	656	115
E. Total Distribution	1,961	1,455
F. Copies not distributed		
1. Office use, left over, unaccounted, spoiled after printing	96	545
2. Returns from news agents	0	0
G. TOTAL	2,057	2,000

I certify that the above statements made by me are correct and complete.  
(HMJ: Nov. 1983) JONATHAN R. WON, Executive Director, Hawaii Medical Journal  
PB0020



*Morrison & Oldfield discuss toxic shock syndrome following surgery in the July 1983 issue of Archives of Surgery. If your post-operative patient gets a rash and fever, call in a dermatologist promptly!*

\* \* \*

Lowering medical or surgical fees by agreement is just as illegal as raising them would be, says the Supreme Court's Maricopa decision.

\* \* \*

*The Journal of the American Medical Association was 100 years old in July: it first appeared July 14, 1883.*

\* \* \*

Watch for the AMA's special supplement on health education, to appear in the November 7 national edition of *Newsweek*. It will be a regular feature.

\* \* \*

*Hospitals might note Hewlett-Packard's four new incentive options for their long-life (5-600 uses) HP 1290A quartz pressure transducer for measuring any kind of physiological fluid pressures in the body. Call them at 526-1555.*

\* \* \*

Would you like to be able to plot a complete oxygen dissociation curve with one drop of blood or hemolysate and 15 min-

utes' recording time? TCS-Medical Products Co.'s Hemox-Analyzer can give you the P<sub>50</sub> value of hemoglobin just this easily. Write them at 2793 Philmont Ave., Huntingdon Valley, Pa. 19006.

\* \* \*

*Immediate digital reading of hemoglobin level is provided by the Model DHB-3 meter offered by NSG Precision Cells, Inc., at 560 S. Broadway, Hicksville, N.Y. 11801.*

\* \* \*

Warner-Lambert's new flexible 35-cm fiber optic sigmoidoscope will be kinder to your patient's anorectal tract. Call 833-1802 and inquire about it.

\* \* \*

*A Hibiclens (chlorhexidine gluconate) impregnated sponge-brush for surgical scrubs is offered by Stuart Pharmaceuticals. The foil-wrapped scrubber is neatly packaged in a gravity-feed dispenser to be hung by the scrub sink. Write them in Wilmington, Del. 19897.*

\* \* \*

Woodroof Laboratories offers the first biosynthetic wound dressing for burns, clean superficial wounds, donor sites, and general wound management; in many uses it can replace human allografts, pigskin, and amnion. It's called Biobrane, and it's packaged in sterile bags, 5 pieces per box, in 3 sizes: 5x5", 5x15" and 10x15". Ask them—at 3011-7 Harvard

St., Santa Ana, Calif. 92704—for their brochure.

\* \* \*

*Do you like birds? Butterflies? History? You would probably enjoy Miriam Rothschild's forthcoming book, "Dear Lord Rothschild: Birds, Butterflies, and History," published at \$29.95 (clothbound) by ISI press. Ask your bookseller.*

\* \* \*

Percutaneous endoscopic gastrostomy from the inside out, is described in the August 12 *JAMA* by Ponsky et al. of Case Western Reserve.

\* \* \*

*If you're using the Hewlett-Packard HP 1290AH-E01 disposable pressure-monitoring kit, you should ask them for their attractive two-color high-gloss 18' x 27' poster detailing 8 simple steps for getting the best performance from it.*

\* \* \*

A sophisticated computerized EKG cart, the FCP-200, is being made for Brentwood Instruments by Fukuda Denshi Co. Two interpretive programs are applied to the data, including more than 130 Minnesota codes, and an opinion is printed out immediately. Write Brentwood at 2909 Oregon Ct., Torrance, Calif. 90503, or call (213) 618-9488.

\* \* \*

Continued on page 386

# A WORD TO THE WHYS

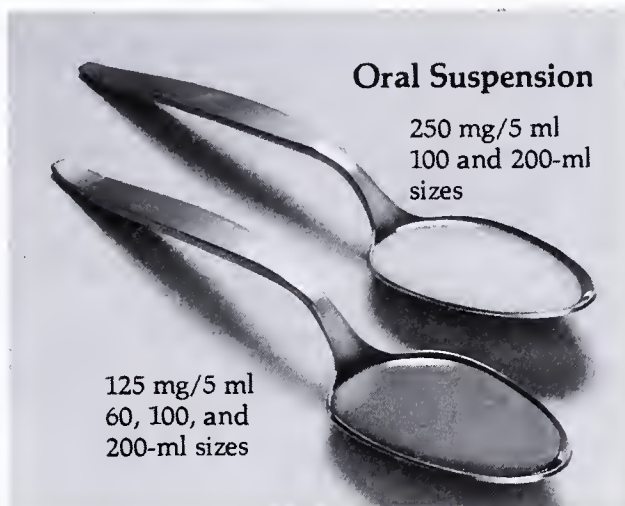
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Watch for the introduction of pyrimidinones, new immune system stimulators being studied by Upjohn. Human trials on one of them have just begun.

\* \* \*

General Electric announces the new Technamatic System, a battery-powered routine radiographic unit which can take up to 1,000 radiographs on a single battery charge. Their publication 5511 (call 849-5953) tells all about it.

\* \* \*

The 1984 edition of USAN and the USP Dictionary of Drug Names, containing all drug names through 1982, was due out in July 1983. Send \$45 to Order Processing Dept., USP Convention, Inc., 12601 Twinbrook Rkwy., Rockville, Md. 20852.

\* \* \*

GE announces its new nuclear gamma camera, MaxiCamera, a 500-mm detector and 91 photomultiplier tubes, with Autotune ZS circuitry. Publication 5469 describes it.

\* \* \*

For \$1,750, you can own a beautiful working replica of the original Abbe-designed Zeiss microscope, the Stativ VII. They have made only 1,000 of them.

\* \* \*

Hewlett-Packard announces several new upgrade kits for improving the image

quality of HP ultrasound systems. The local phone number is 526-1555. Tell them you read about it here, please!

\* \* \*

"Update in Cardiology," a refresher course, is being given October 10-13 in Atlanta, Ga., by the American College of Cardiology and Emory University Medical School, at the Colony Square Hotel. Write the ACC at 9111 Old Georgetown Rd., Bethesda, Md. 20814.

\* \* \*

A \$30 booklet, *Using the Clinical Laboratory in Medical Decision-Making*, presents in one volume a series published by the American Society of Clinical Pathologists intermittently since 1975. Write the ASCP, Customer Services, Dept. TX77B (how many departments must they have), Chicago, Ill. 60612.

\* \* \*

Resort Seminars, Box 5212, Snowmass Village, Colo. 81615, will tell you about their weekly winter medical and professional business management seminars if you ask them. Ski and learn—and deduct!

\* \* \*

Caring for bedfast patients? Ask Gaymar, One Bank St., Orchard Park, N.Y. 14127, for the free Pressure Sore Risk Analyzer, and quantitate their risk of getting a pressure sore.

\* \* \*

A new tracheostomy tube allows ventilator-dependent patients to talk while wearing it, by an independent air source directed up through the larynx. Implant Technologies, Inc., 7900 W. 78th St. 200, Minneapolis, Minn. 55435, has just started marketing it as "COMMUNITRACH I."

\* \* \*

Do you want to improve your command of English, doctor? Jeffrey Norton Publishers of Guilford, Conn. 06437, supplies 2 audio cassettes and a 156-page text for this purpose. It costs \$39.

\* \* \*

The Biofeedback Society of America will hold its 15th annual meeting at the Regent Hotel in Albuquerque, N.M., March 23-24, 1984. Deadline for papers was set at October 1, 1983. The society's address is 4301 Owens St., Wheat Ridge, Colo. 80033.

## HMA Auxiliary

### Call to Convention

The annual meeting of the Auxiliary to the Honolulu County Medical Society and the Hawaii Medical Association will be held December 8, 1983, at the Hilton Hawaiian Village Hotel. The morning session will include the election of officers for 1984.

A festive holiday luncheon and entertainment will follow the morning meeting. Plan to invite your friends and attend this important event. Consult your flyer for full details.

\* \* \*

### M.A.D.D. Update

Another health project that has attracted Auxiliary and community interest has been the formation of a M.A.D.D. (Mothers Against Drunk Driving) chapter here in Hawaii. HMAA President Carol McNamee and A/HCMS President Ella Edwards organized a community meeting in August at the Kaimuki Library. Further meetings were held in September and October at the Moiliili Library. We would like to see more Auxiliary members involved in this project, particularly during this organizational stage.

Anyone interested in assisting with these two projects should call Auxiliary Secretary Irene Kodani, 536-7702 Tuesday or Thursday mornings.

### Blood Bank Volunteer Training

In late April and early May, our first group of Auxiliary members were trained at the Blood Bank. The group included Ella Edwards, May Kim, Jo Peyton, Karin Rajdev, Jane Uemura, and Joan Wong. The enthusiastic Blood Bank staff are well organized and inspiring trainers who made it easy on us by offering both flexible and varied service opportunities. We will volunteer on an individual basis as Auxiliary members. Another training session is to be scheduled this fall for those who are interested but were unable to attend the spring session.

\* \* \*

### New Community Project Resource Available

A new resource is available in the Auxiliary office for anyone involved in planning a community project. The 1983-84 Project Bank Catalog is updated and now contains more than 1,000 projects, including 70 new entries submitted by state and county auxiliaries during the 1982-83 year.

There are 17 major categories: aging, blood donor, children and youth, family life, fund-raising, health careers, health education, health services, international health, legislation, membership, mental health, physician-spouse activities, safety, and screening. Each of the categories has a variety of subcategories under it.

All projects in the bank provide valuable information and ideas. Be sure to refer to the Project Bank Catalog when planning a community project.

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### **Tests for Syphilis**

There are two types of tests to detect syphilis: the screening non-treponemal test and the confirmatory treponemal test. Treponemal infection results in the production of two types of antibodies in man. One is a non-specific antibody that reacts with a non-treponemal cardiolipin-lecithin-cholesterol antigen and the other reacts with the treponemal organism.

The first test developed by Wasserman in 1906 was a non-treponemal complement fixation test. This was followed by many different procedures using the cardiolipin-lecithin antigen. The tests used today—VDRL (venereal disease research laboratory) slide test, RPR (rapid plasma reagin) test, and ART (automated reagin test)—are of similar sensitivity and specificity. These tests are negative early in the course of primary syphilis and about 80% reactive in the later stages. About 98% are positive in secondary syphilis and 70% in late syphilis. There are occasional false-positive results—about 1% in the general population but as many as 10% or more in heavy drug users.<sup>1</sup> Acute false-positive reactions may follow an acute febrile illness (bacterial, viral, or malarial), following immunizations or during pregnancies. These false-positive reactions are usually transient (less than 6 months) and of low titer (less than 1:8). Chronic false-positives are associated with autoimmune diseases such as SLE, chronic infections such as leprosy, chronic drug use, some cases of lymphomas, sarcoid, Sjogrens, liver metastases, and in some families due to unknown causes. The diagnosis of syphilis must never be made on the basis of a single reactive non-treponemal serologic test and must be confirmed by historical and clinical information and treponemal tests.

The non-treponemal tests are of value in following therapy. The best gauge of treatment response is a falling titer.<sup>2</sup> The non-treponemal tests become negative within 6 to 18 months in seropositive primary syphilis and within two years in secondary syphilis.<sup>3</sup> The chance of seronegativity is less in cases of long-standing disease. A fourfold rise in titer implies inadequate therapy, relapse or reinfection.

The first treponemal test, the treponema pallidum immobilization test (TPI), was developed in 1949 and is now performed by a few research laboratories. The fluorescent treponemal antibody absorption test (FTA-ABS) is the standard test today. It is about 85% reactive in primary, nearly 100% reactive in secondary, about 95% in late syphilis, and persists for years despite therapy. The Treponema pallidum hemagglutination assay

*Continued on page 390*

## **DOCTORS - DENTISTS**

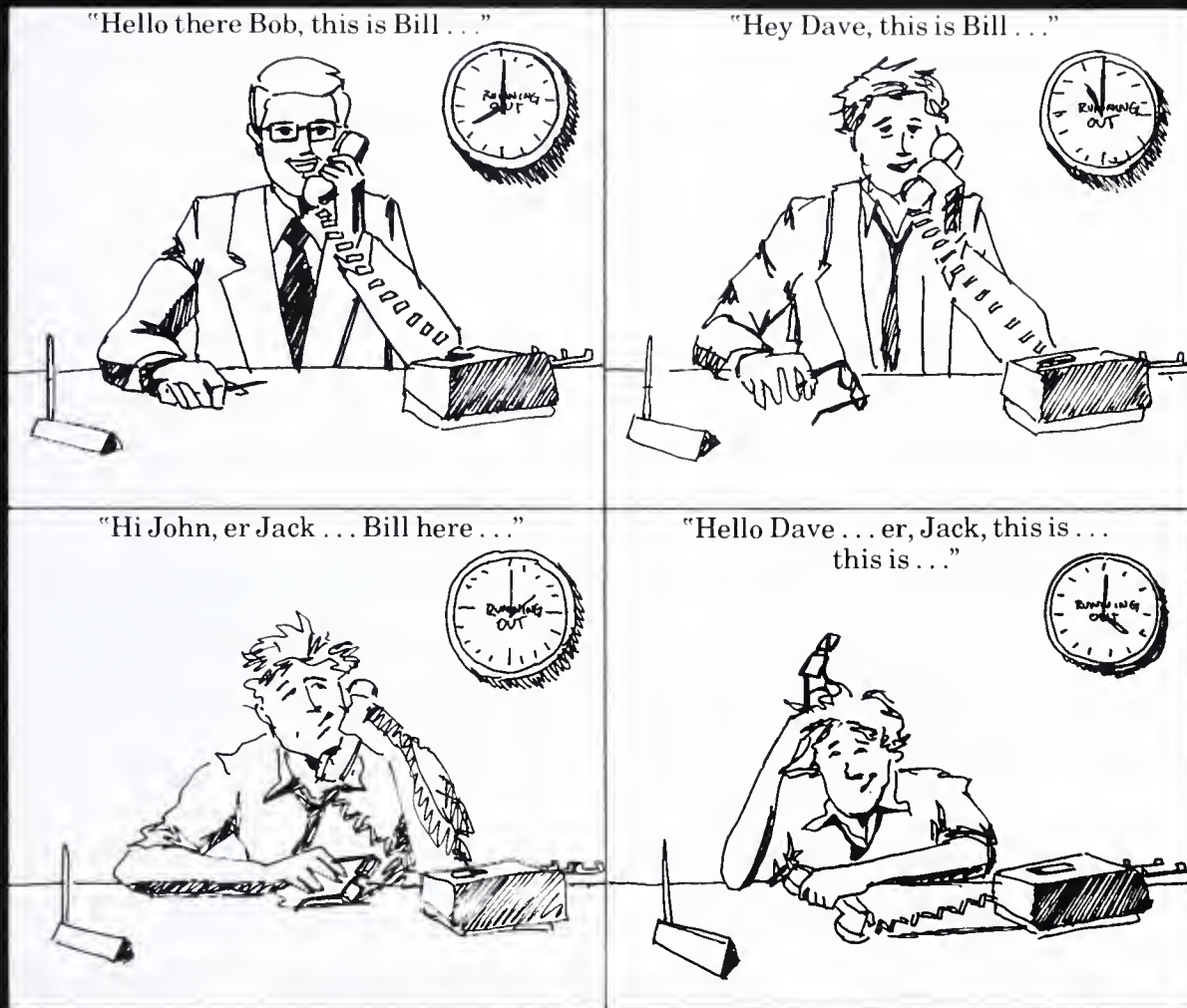
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(TPHA) uses sheep or turkey red blood cells and is useful in testing large numbers of specimens. A new test is the enzyme-linked immunosorbant assay (ELISA) which has the advantage of an endpoint that can be read spectrophotometrically and not require a subjective interpretation. The FTA-ABS-IgM method is highly reliable in the diagnosis of congenital syphilis. The IgM antibody does not cross the placenta and its presence in cord blood indicates fetal infection. The solid phase hemabsorption (SPHA) test also detects IgM antibodies. About 1% of healthy individuals without a history or

symptoms of syphilis may give false-positive treponemal reactions, usually transiently and of low reactivity. The treponemal test only indicates past or recent syphilis and not the state nor activity of disease, nor does it differentiate syphilis from the other treponemal infections such as yaws and pinta.

#### REFERENCES

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3. Fiumara NJ: Treatment of primary and secondary syphilis, serologic response. *JAMA* 243:2500-2502, 1980.
4. Wormser SP: Serological test for syphilis: assessment after 75 years experience. *Lab. Med.* 13:20-27, 1982.

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## Book Review

**Rehabilitation in Ischemic Heart Disease.** Editors: W.P. Blocker Jr., M.D., D. Cardus, M.D. 474 pp. Illustrations. Spectrum Publications, Inc., Jamaica, New York, 1983.

While this volume is generally a satisfactory publication, it attempts too much. The preface states, "This text is the result of the efforts of many experts . . . and attempts to give an overall look at the entire field of cardiac rehabilitation". As one might expect with multiple authors, the quality of writing is variable. With 52 contributors, overwhelmingly from the Houston V.A. Medical Center and the Baylor College of Medicine, one has the impression that it is primarily a vehicle for getting into print rather than serious scholarship. Despite these defects, the reviews are interesting with good bibliographies. It is a worthwhile effort but hardly the definitive work on rehabilitation in ischemic heart disease.

Alfred D. Morris, M.D.

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VOL. 42, NO. 12

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The effectiveness of diazepam in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

**Contraindications:** Tablets or capsules in children under 6 months of age; known hypersensitivity; acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy.

**Warnings:** As with most CNS-acting drugs, caution against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving). Withdrawal symptoms similar to those with barbiturates and alcohol have been observed with abrupt discontinuation, usually limited to extended use and excessive doses. Infrequently, milder withdrawal symptoms have been reported following abrupt discontinuation of benzodiazepines after continuous use, generally at higher therapeutic levels, for at least several months. After extended therapy, gradually taper dosage. Keep addiction-prone individuals (drug addicts or alcoholics) under careful surveillance because of predisposition to habituation/dependence.

**Usage in Pregnancy:** Use of minor tranquilizers during first trimester should almost always be avoided because their use is rarely a matter of urgency and because of increased risk of congenital malformations, as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.

**ORAL:** Advise patients against simultaneous ingestion of alcohol and other CNS depressants.

Not of value in treatment of psychotic patients; should not be employed in lieu of appropriate treatment. When using oral forms adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increase in dosage of standard anticonvulsant medication; abrupt withdrawal in such cases may be associated with temporary increase in frequency and/or severity of seizures.

**INJECTABLE:** To reduce the possibility of venous thrombosis, phlebitis, local irritation, swelling and, rarely, vascular impairment when used I.V.: inject slowly; taking at least one minute for each 5 mg (1 ml) given, do not use small veins, i.e., dorsum of hand or wrist; use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Injectable Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Administer with extreme care to elderly, very ill, those with limited pulmonary reserve because of possibility of apnea and/or cardiac arrest; concomitant use of barbiturates, alcohol or other CNS depressants increases depression with increased risk of apnea, have resuscitative facilities available. When used with narcotic analgesic eliminate or reduce narcotic dosage at least 1/3, administer in small increments. Should not be administered to patients in shock, coma, acute alcoholic intoxication with depression of vital signs.

Has precipitated tonic status epilepticus in patients treated for petit mal status or petit mal variant status. Not recommended for OB use.

Efficacy/safety not established in neonates (age 30 days or less); prolonged CNS depression observed. In children, give slowly (up to 0.25 mg/kg over 3 minutes) to avoid apnea or prolonged somnolence; can be repeated after 15 to 30 minutes. If no relief after third administration, appropriate adjunctive therapy is recommended.

**Precautions:** If combined with other psychotropics or anticonvulsants, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of diazepam, i.e., phenothiazines, narcotics, barbiturates, MAO inhibitors and antidepressants. Protective measures indicated in highly anxious patients with accompanying depression who may have suicidal tendencies. Observe usual precautions in impaired hepatic function; avoid accumulation in patients with compromised kidney function. Limit oral dosage to smallest effective amount in elderly and debilitated to preclude ataxia or over-sedation (initially 2 to 2½ mg once or twice daily, increasing gradually as needed and tolerated).

The clearance of diazepam and certain other benzodiazepines can be delayed in association with Tagamet (cimetidine) administration. The clinical significance of this is unclear.

**INJECTABLE:** Although promptly controlled, seizures may return; readminister if necessary; not recommended for long-term maintenance therapy. Laryngospasm/increased cough reflex are possible during peroral endoscopic procedures; use topical anesthetic, have necessary countermeasures available. Hypotension or muscular weakness possible, particularly when used with narcotics, barbiturates or alcohol. Use lower doses (2 to 5 mg) for elderly/debilitated.

**Adverse Reactions:** Side effects most commonly reported were drowsiness, fatigue, ataxia. Infrequently encountered were confusion, constipation, depres-

sion, diplopia, dysarthria, headache, hypotension, incontinence, jaundice, changes in libido, nausea, changes in salivation, skin rash, slurred speech, tremor, urinary retention, vertigo, blurred vision. Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported; should these occur, discontinue drug.

Because of isolated reports of neutropenia and jaundice, periodic blood counts, liver function tests advisable during long-term therapy. Minor changes in EEG patterns, usually low-voltage fast activity, observed in patients during and after diazepam therapy are of no known significance.

**INJECTABLE:** Venous thrombosis/phlebitis at injection site, hypoactivity, syncope, bradycardia, cardiovascular collapse, nystagmus, urticaria, hiccups, neutropenia. In peroral endoscopic procedures, coughing, depressed respiration, dyspnea, hyperventilation, laryngospasm/pain in throat or chest have been reported.

**Dosage:** Individualize for maximum beneficial effect.

**ORAL:** *Adults:* Anxiety disorders, relief of symptoms of anxiety—Valium tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 Valrelease capsules (15 to 30 mg) daily. Acute alcohol withdrawal—tablets, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; or 2 capsules (30 mg) the first 24 hours, then 1 capsule (15 mg) daily as needed. Adjunctively in skeletal muscle spasm—tablets, 2 to 10 mg t.i.d. or q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily. Adjunctively in convulsive disorders—tablets, 2 to 10 mg b.i.d. to q.i.d.; or 1 or 2 capsules (15 to 30 mg) once daily.

*Geriatric or debilitated patients:* Tablets—2 to 2½ mg 1 or 2 times daily initially, increasing as needed and tolerated (see Precautions). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose.

*Children:* Tablets—1 to 2½ mg t.i.d. or q.i.d. initially, increasing as needed and tolerated (not for use in children under 6 months). Capsules—1 capsule (15 mg) daily when 5 mg oral Valium has been determined as the optimal daily dose (not for use in children under 6 months).

**INJECTABLE:** Usual initial dose in older children and adults is 2 to 20 mg I.M. or I.V., depending on indication and severity. Larger doses may be required in some conditions (tetanus). In acute conditions injection may be repeated within 1 hour, although interval of 3 to 4 hours is usually satisfactory. Lower doses (usually 2 to 5 mg) with slow dosage increase for elderly or debilitated patients and when sedative drugs are added. (See Warnings and Adverse Reactions.) For dosages in infants and children see below; have resuscitative facilities available.

**I.M. use:** by deep injection into the muscle.

**I.V. use:** inject slowly; take at least one minute for each 5 mg (1 ml) given. Do not use small veins, i.e., dorsum of hand or wrist. Use extreme care to avoid intra-arterial administration or extravasation. Do not mix or dilute Valium with other solutions or drugs in syringe or infusion flask. If it is not feasible to administer Valium directly I.V., it may be injected slowly through the infusion tubing as close as possible to the vein insertion.

Moderate anxiety disorders and symptoms of anxiety, 2 to 5 mg I.M. or I.V., and severe anxiety disorders and symptoms of anxiety, 5 to 10 mg I.M. or I.V., repeat in 3 to 4 hours if necessary; acute alcohol withdrawal, 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary. Muscle spasm, in adults, 5 to 10 mg I.M. or I.V. initially, then 5 to 10 mg in 3 to 4 hours if necessary (tetanus may require larger doses); in children administer I.V. slowly; for tetanus in infants over 30 days of age, 1 to 2 mg I.M. or I.V., repeat every 3 to 4 hours if necessary; in children 5 years or older, 5 to 10 mg repeated every 3 to 4 hours as needed. Respiratory assistance should be available.

Status epilepticus, severe recurrent convulsive seizures (I.V. route preferred), 5 to 10 mg adult dose administered slowly, repeat at 10- to 15-minute intervals up to 30 mg maximum. Repeat in 2 to 4 hours if necessary, keeping in mind possibility of residual active metabolites. Use caution in presence of chronic lung disease or unstable cardiovascular status. Infants (over 30 days) and children (under 5 years), 0.2 to 0.5 mg slowly every 2 to 5 min., up to 5 mg (I.V. preferred) Children 5 years plus, 1 mg every 2 to 5 min., up to 10 mg (slow I.V. preferred); repeat in 2 to 4 hours if needed. EEG monitoring may be helpful. In endoscopic procedures, titrate I.V. dosage to desired sedative response, generally 10 mg or less but up to 20 mg (if narcotics are omitted) immediately prior to procedure; if I.V. cannot be used, 5 to 10 mg I.M. approximately 30 minutes prior to procedure. As preoperative medication, 10 mg I.M.; in cardioversion, 5 to 15 mg I.V. within 5 to 10 minutes prior to procedure. Once acute symptomatology has been properly controlled with injectable form, patient may be placed on oral form if further treatment is required.

**Management of Overdosage:** Manifestations include somnolence, confusion, coma, diminished reflexes. Monitor respiration, pulse, blood pressure; employ general supportive measures, I.V. fluids, adequate airway. Use levarterenol or metaraminol for hypotension. Dialysis is of limited value.

**How Supplied:**

**ORAL:** Valium (diazepam/Roche) scored tablets—2 mg, white; 5 mg, yellow; 10 mg, blue—bottles of 100 and 500; Prescription Paks of 50, available in trays of 10; Tel-E-Dose® packages of 100, available in trays of 4 reverse-numbered boxes of 25 and in boxes containing 10 strips of 10.

Valrelease (diazepam/Roche) slow-release capsules—15 mg (yellow and blue), bottles of 100, Prescription Paks of 30.

**INJECTABLE:** Ampuls, 2 ml, boxes of 10; Vials, 10 ml, boxes of 1; Tel-E-Ject® (disposable syringes), 2 ml, boxes of 10. Each ml contains 5 mg diazepam, compounded with 40% propylene glycol, 10% ethyl alcohol, 5% sodium benzoate and benzoic acid as buffers, and 1.5% benzyl alcohol as preservative.





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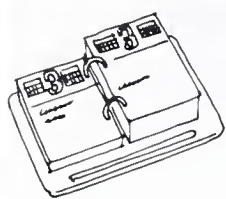
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## Continuing Medical Education

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Accredited Programs of CME allow one unit of AMA credit for each hour of instruction excluding all "breaks." Some programs also are accredited for AAFP prescribed credit.

#### LOCAL ACCREDITED PROGRAMS

##### ONGOING

For a complete list of ongoing programs, please refer to the September 1983 issue of the HAWAII MEDICAL JOURNAL. Further information is available through the individual institutions or through the HMA's CME Department.

##### SPECIAL EVENTS

Dec. 11-13 1983	American Hospital Association, Engineering Update. Contact: Bev Rogers, 333 N. Michigan Avenue, Chicago, Ill., 60601. To be held at the Westin Ilikai, Honolulu, Hawaii.
Dec. 13-16 1983	Sexually Transmitted Diseases, Honolulu Medical Group Research and Education Foundation, 550 S. Beretania Street, Honolulu, Hawaii 96813, (808) 537-2211. To be held at the Prince Kuhio Hotel, Honolulu, Hawaii.
Dec. 26-30 1983	Emotional Growth in Adult Life, American Institute of Medical Education, (213) 842-8818. To be held at the Kona Hilton, Big Island, Hawaii.
Dec. 27-Jan. 1, 1984	Update 1983: Genitourinary Infections, Duke University, School of Medicine, Office of CME, Box 3306 DUMC, Durham, N.C. 27710. At: Honolulu, Hawaii.
Dec. 28-30, 1983	2nd Annual Alumni Course, Transplantation, Sports Injuries, Imaging, Gynecology, and Medical-Legal Issues, co-sponsored with the University of Alabama in Birmingham School of Medicine. Held in conjunction with the Rainbow Basketball Classic. At: Sheraton Surfrider Hotel, Honolulu, Hawaii.
Dec. 28-30 1983	2nd Annual Alumni Course, Medical and Legal Questions, to be held at the University of Hawaii East-West Center. (Open to non-alumni as well.)
Jan. 7-14, 1984	Pan-Pacific Surgical Association—17th Congress, Pan-Pacific Surgical Association, 1164 Bishop Street, Suite 1717, Box 553. At: Honolulu, Hawaii.
Jan. 16-20, 1984	Gastro-Intestinal and Hepatic Diseases, Honolulu Medical Group Research and Education Foundation, 550 S. Beretania Street, Honolulu, Hawaii 96813. To be held at the Mauna Kea Beach Hotel, Big Island, Hawaii.
Jan. 15-21, 1984	AMA Winter Scientific Session. Contact: Bob Hobart, Dept. of Meeting Management, 535 N. Dearborn Street, Chicago, Ill. 60610. To be held at the Sheraton Waikiki, Royal Hawaiian, Surfrider, Moana, and Princess Kaiulani hotels in Honolulu, Hawaii.

Jan. 16-22, 1984	Second Annual Topics in Internal Medicine, University of Colorado Health Sciences Center, Office of Post-graduate Education, Campus Box C295, 4200 East 9th Avenue, Denver, Colo. 80262, (303) 394-5241.
Jan. 21-28, 1984	Pediatric Emergencies, University of California, San Diego, School of Medicine, La Jolla, Calif. 92093. At: Kona, Hawaii.
Jan. 21-28, 1984	12th Annual Diagnostic Radiology Seminar, University of California at San Francisco, Dept. of Radiology, Post-graduate Education, Room C324, Third & Parnassus Ave., San Francisco, Calif. 94143, (415) 666-5731. To be held on Kauai, Hawaii.
Jan. 22-26, 1984	8th Annual Echocardiography Conference, Honolulu Medical Group Research and Education Foundation, 550 S. Beretania Street, Honolulu, (808) 537-2211. To be held at the Kahala Hilton Hotel, Honolulu, Hawaii.
Jan. 22-29, 1984	Advanced Problems in Cardiac Emergencies, American Institute of Postgraduate Education, P.O. Box 2101, Del Mar, Calif. 92014, (619) 753-0540 or (619) 454-3212. At: Kona Surf Hotel, Big Island, Hawaii.
Jan. 27-29, 1984	A Psychiatric Update for Physicians: The Mind and Medicine. Contact: Royal Hawaiian Seminars, 1314 S. King Street, Suite 609, Honolulu, Hawaii 96814. At: Halekulani Hotel, Honolulu, Hawaii.
Feb. 2-9 1984	Pan American Conference on Fertility and Sterility, U.S. International Foundation for Studies in Reproduction, Inc., 112-44 69th Avenue, Forest Hills, N.Y. 11375. At: Kona, Hawaii.
Feb. 2-11, 1984	Postgraduate Course in Infertility and Reproductive Endocrinology, U.S. International Foundation for Studies in Reproduction, Inc., 112-44 69th Avenue, Forest Hills, N.Y. 11375.
Feb. 3-7, 1984	Advanced Seminar for Physicians, Administrators and Trustees, Estes Park Institute, Box 400, Englewood, Colo. 80151. At: Molokai, Hawaii.
Feb. 4-10, 1984	Perinatal Medicine, University of Southern California School of Medicine, Post-graduate Division, KAM 320, 2025 Zonal Avenue, Los Angeles, Calif. 90033, (213) 224-7047. To be held at the Royal Lahaina Hotel on Maui, Hawaii.
Feb. 11-18, 1984	A Course in Otolaryngic Allergy, American Academy of Otolaryngic Allergy, Director of Extramural Education, 1101 Vermont Avenue, N.W., Suite 302, Washington D.C. 20005. At: Kona, Hawaii.
Feb. 14-17, 1984	Cardiology Update, Straub Clinic & Hospital, 888 S. King Street, Honolulu, Hawaii 96813, (808) 523-2311, Ext. 8152. Contact: Institute for Medical Studies, Mrs. Kim Stroich, 14761 Franklin Avenue, Suite A, Tustin, Calif. 92680, (714) 832-2650. At: Hilton Hawaiian Village, Honolulu, Hawaii.
Feb. 25- March 3, 1984	Recent Advances in Cardiology—Annual Meeting. Contact: Yvonne Brewer, 1188 Bishop Street, Suite 3411, Honolulu, Hawaii 96813, (909) 524-3540, (808) 523-3900. At: The Lodge at Vail, Colorado.
March 11-18, 1984	Kidney Diseases Course, University of Colorado Health Sciences Center, Office of Post-graduate Medical Education, Campus Box C295, 4200 East 9th Avenue, Denver, Colo. 80262, (303) 394-5241 or 394-5195. To be held on Maui.
March 15-17, 1984	Mid-Life Issues, Hawaii Psychiatric Society and Area VII of the American Psychiatric Association. For further information call D. Chang, (808) 947-8573. To be held at the Maui Inter-Continental Hotel, Maui, Hawaii.
March 16-23, 1984	The Spine, University of Washington, Continuing Medical Education, Health Sciences Center D-303, Seattle, Wash. 98195, (206) 543-1050. To be held at the Westin Wailea Beach Hotel, Maui, Hawaii.
April 29, 1984	Hawaii Asthma Allergy Symposium—1984, The Hawaii Asthma Camp, (808) 537-6954, 1710 Pali Highway, Honolulu, Hawaii 96813. At: Westin Ilikai Hotel, Honolulu, Hawaii.

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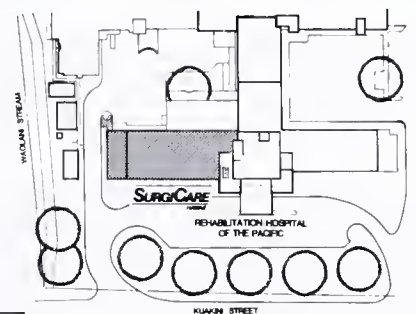
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# Congenital Diaphragmatic Hernia

## (An 8-Year Experience in Hawaii)

Rodney B. Boychuk, M.D., Jane C. Nelson, M.A., and Karen A. Yates, R.N., Honolulu

*Twenty-one cases of congenital diaphragmatic hernia in newborns in the state of Hawaii from 1975 to 1982 were reviewed and analyzed. The incidence was lower in Hawaii than as reported from other locales, but higher at Kapiolani-Children's Medical Center (KCMC) than in referral hospitals. The 7 infants who survived were compared to the 14 infants who expired; no differences were found between the 2 groups when compared for age of mother, gravidity or parity of mother, method of delivery, gestational age, birth weight, symptoms, age of life at diagnosis, or age of life at surgery. Significant differences were found for Apgar scores, age at intubation, preoperative pneumothorax, oxygen requirements prior to surgery, ventilatory assistance prior to surgery, PaO<sub>2</sub> prior to surgery, A-aDO<sub>2</sub> prior to surgery, time in the operating room, oxygen requirements after surgery, PaO<sub>2</sub> after surgery, and A-aDO<sub>2</sub> after surgery.*

Congenital posterolateral diaphragmatic hernias represent one of the surgical emergencies of the newborn. Typically, these present dramatically in the delivery room with severe respiratory distress and cyanosis, requiring vigorous and exact initial resuscitation. Failure to recognize this problem, resuscitate, and stabilize appropriately may result in worsening of the respiratory distress, pneumothorax, or death.

The risk of occurrence of posterolateral hernias has been stated to be as high as 1 in 2,200 births.<sup>1</sup> As immediate recognition and accurate resuscitation and stabilization prior to transportation to a tertiary care center for surgery is essential, a review would be appropriate and is included herein.

### Methods

All cases of neonatal diaphragmatic problems from January 1975 to December 1982 presenting at or transferred to Kapiolani-Children's Medical Center (KCMC), Hawaii's only non-military tertiary care unit, were reviewed. Of 38 cases of diaphragmatic anomalies and problems during this 7-year period, 21 cases of congenital diaphragmatic hernias were reviewed and analyzed. Cases were identified through the Medical Records Department of KCMC and the Research and Statistics Office of the Department of Health. Antenatal and neonatal comparisons were made in an attempt to identify those factors which might predict survival or death. Analysis of variance and chi-square analysis were utilized to determine significance.

Department of Pediatrics, John A. Burns School of Medicine, University of Hawaii, and Kapiolani-Children's Medical Center, Honolulu, Hawaii.

Accepted for publication July 1983.

### Results

Births in the state of Hawaii from 1975-1982 are outlined in Table 1. As the number of neonatal military diaphragmatic hernia survivors are unknown, this population was eliminated from incidence calculations. Of the 21 babies with diaphragmatic hernia, 9 were transferred from referral hospitals, and the other 12 were born at Kapiolani-Children's Medical Center. No cases of diaphragmatic hernia with death occurring at referral hospitals prior to transport were identified. The incidence of congenital diaphragmatic hernias in the non-military population in Hawaii for the 7-year period was about 1 per 3,700 live births at KCMC and about 1 per 7,000 live births in the remaining non-military hospitals delivering babies in the state.

Of the 21 cases reviewed and analyzed, the mean gestational age was 39.4 weeks ( $\pm 0.49$ ) the mean birth weight was 3,150 grams ( $\pm 109.6$ ). Of the total, 20 had diaphragmatic hernia as their only congenital anomaly. One infant had multiple congenital anomalies and was excluded from statistical analysis. This infant, plus one other, died prior to surgery.

Only 7 infants survived, while 14 expired. (Survival rate was 33%.) When survivors vs. non-survivors were compared, no differences were found between the two groups compared for age of mother, gravidity or parity of mother, method of delivery, gestational age, birth weight, symptoms, age of life at diagnosis or age of life at surgery (Table 2).

Significant differences were found when comparing survivors to non-survivors for Apgar scores, age at intubation, preoperative pneumothorax, oxygen requirements prior to surgery, ventilatory assistance prior to surgery, PaO<sub>2</sub> prior to surgery, A-aDO<sub>2</sub> prior to surgery, time in the operating room, oxygen requirements

after surgery, PaO<sub>2</sub> after surgery, and A-aDO<sub>2</sub> after surgery (Table 3).

All 7 survivors were born at outlying hospitals and transferred to KCMC. The non-survivors expired between 4 to 130 hours of life, with a mean time of death being 28 hours ( $\pm 9.01$ ). In 10 non-survivors autopsied, significant lung hypoplasia was found, with a mean combined lung weight of 25.3 ( $\pm 3.1$ ). This is 45% ( $\pm 4.5\%$ ) of the expected normal value.<sup>2</sup>

### Discussion

Infants with diaphragmatic hernia present immediately after birth with respiratory distress, cyanosis, and "failure to pink up," despite vigorous and accurate resuscitation. The abdominal contour is scaphoid, mediastinal structures and heart sounds are displaced, and breath sounds are decreased or absent. Symptoms tend to progress with time as the gut continues to fill with gas, secondary to either swallowed or ventilated air. Further cardiopulmonary compression occurs, respiratory acidosis and hypoxia are increased, and death is inevitable unless surgical intervention occurs.

These acute severe symptoms demand immediate radiologic evaluation of both the chest and abdomen. Typically, the left hemithorax is occupied by air-filled bowel, displacing the mediastinum to the opposite side, while the abdomen is airless.

As the severity of clinical findings, respiratory acidosis, and hypoxia are in part due to pulmonary compression by intrathoracic abdominal viscera, it is important to prevent distention and decompress the viscera. Bag and mask ventilation should be immediately discontinued and the neonate should be intubated and ventilated using a pressure-monitored hand-ventilation system. A nasogastric tube should be inserted and connected to intermittent suction for gastrointestinal decompression. Although ideally these infants should be rapidly ventilated with the lowest pressure possible, they frequently require high pressures in order to oxygenate and ventilate them. Respiratory insufficiency at this time is secondary to pulmonary hypoplasia and compression.<sup>3</sup> Pulmonary compression initially due to herniated viscera may be worsened by the concomitant development of a pneumothorax, particularly on the contralateral side.<sup>4</sup> Close clinical and radiologic evaluation for air leaks are im-

TABLE 1. Live births in Hawaii

Year	Total births	Military births	Non-military births		Total
			KCMC	Rest of state	
1975	15,777	3,858	4,886	7,033	11,919
1976	16,414	3,851	5,411	7,152	12,563
1977	16,983	3,771	5,616	7,596	13,212
1978	16,762	3,665	5,343	7,754	13,097
1979	17,568	3,826	5,601	8,141	13,742
1980	18,216	3,775	6,020	8,421	14,441
1981	17,990	3,497	6,027	8,466	14,493
1982*	18,300	3,800	6,000	8,500	14,500
TOTAL	138,010	30,043	44,904	63,063	107,967

\*1982 Figures are preliminary estimates

TABLE 2. Non-significant differences between survivors and non-survivors

	Survivors Mean (± SE)	Non-survivors Mean (± SE)	P Value
Mother's age (Yrs)	27.4 (± 2.21)	27.4 (± 1.23)	.657
Mother's gravidity	2.4 (± .43)	2.4 (± .35)	.529
Mother's parity	1.14 (± .40)	1.23 (± .30)	.648
Spontaneous vaginal delivery	6	10	.907
Gestational age (Wks)	40.1 (± .68)	39.5 (± .57)	.549
Birth weight (Gms)	3132 (± 116)	3240 (± 145)	.618
Age of life at diagnosis (Hr)	2.29 (± 1.13)	1.04 (± .038)	.138
Age of life at surgery (Hr)	12.5 (± 3.75)	5.6 (± 1.88)	.085

TABLE 3. Significant differences between survivors and non-survivors

	Survivors Mean (± SE)	Non-survivors Mean (± SE)	
Apgar scores			
a) 1 minute	6.7 (± .88)	2.25 (± .48)	*
b) 5 minute	7.5 (± .85)	3.5 (± .73)	+
Age at intubation (Min)	630.7 (± 250.6)	62.2 (± 57.3)	+
Preop pneumothorax (#)	0	10	+
Time in OR (Min)	115.7 (± 12.46)	155.5 (± 10.7)	†
First ABG			
a) FiO <sub>2</sub> (%)	60.4 (± 16.6)	100 (± 0)	+
b) PaO <sub>2</sub> (mmHg)	51.6 (± 11.8)	35.4 (± 2.23)	†
Preop respiratory assistance			
a) FiO <sub>2</sub> (%)	72.6 (± 12.98)	100 (± 0)	+
b) PIP (cmH <sub>2</sub> O)	22.25 (± 5.1)	43.5 (± 5.03)	†
Preop ABG			
a) FiO <sub>2</sub> (%)	61.3 (± 13.9)	100 (± 0)	+
b) A-aDO <sub>2</sub>	290.3 (± 107.6)	607.7 (± 12.6)	*
Postop respiratory assistance			
a) FiO <sub>2</sub> (%)	48.3 (± 7.03)	100 (± 0)	*
b) PIP (cmH <sub>2</sub> O)	23.4 (± 2.08)	36.8 (± 3.18)	†
c) Rate (Min)	51.2 (± 11.1)	97.5 (± 9.77)	†
Postop ABG			
a) FiO <sub>2</sub> (%)	40 (± 7.5)	98.2 (± 1.82)	*
b) A-aDO <sub>2</sub>	129.4 (± 48.8)	545.7 (± 35.5)	*

\* Significant at the <0.1% level

+ Significant at the 1% level

† Significant at the 5% level

perative, and chest tube insertion for pneumothorax may be required.

Following stabilization and transport to a tertiary care unit, the next step in treating the respiratory embarrassment is surgical reduction of the hernia. This allows the mediastinum to assume a normal position and the lungs to expand to their maximum capacity, which is dependent on the degree of pulmonary hypoplasia. As the fetal abdominal viscera have been located in the thorax throughout fetal life, these "thoracic viscera" result in a reduction of the number of bronchial and bronchiolar divisions in the lung.<sup>3,5</sup> If the abdominal viscera herniate into the thorax totally, there will be a severe reduction in lung divisions and, therefore, a resultant severe pulmonary hypoplasia. If, however, herniation occurs later, mild-to-moderate division occurs with the resultant mild-to-moderate hypoplasia. The degree of lung hypoplasia also determines the degree of pulmonary artery hypoplasia and, therefore, the degree of pulmonary hypertension.<sup>3,5,6</sup> As the pre-acinar and intra-acinar vessels are decreased, the medical wall of the arteries thickens, and the arterial wall muscle is extended peripherally into small pre-acinar arteries.<sup>7</sup> The resultant pulmonary hypertension causes a persistence of the fetal circulation with right-to-left shunting through the foramen ovale and ductus arteriosus. This results in persistent severe hypoxemia and is the most frequent cause of death in these infants.<sup>8</sup>

The incidence of diaphragmatic hernia appears to be lower in Hawaii than is reflected in the pediatric literature. Why it is twice as high at KCMC than at referral hospitals is unknown. Careful scrutinizing of statistics from many sources did not reveal any babies with diaphragmatic hernia dying at referral hospitals prior to transport. Is it possible that these pregnancies were identified as "high risk" and delivered at the tertiary care center (KCMC) for that reason? Congenital diaphragmatic hernia can be detected *in utero* by prenatal ultrasonography<sup>9</sup> or by amniogram.<sup>10</sup> None of our cases were diagnosed by these methods. Polyhydramnios has been documented in a number of cases with upper gastrointestinal tract obstruction secondary to herniation. In none of our cases did polyhydramnios lead to the antenatal diagnosis of diaphragmatic hernia.

Although antenatal identification was not apparent in our cases, it is difficult to explain the "double incidence" of diaphragmatic hernia at the tertiary care center without postulating that these mothers were "identified" as high risk and, therefore, delivered at KCMC.

No significant antenatal differences were found between survivors and non-survivors. Although non-survivors tended to present earlier in life (1.0 hr vs. 2.3 hrs) and be operated on sooner (5.6 hrs vs.

(Continued on page 402)



12.5 hrs) than survivors, this was not statistically different.

There were a number of significant differences between the survivors and non-survivors. The Apgar scores at both 1 and 5 minutes were significantly higher for survivors than non-survivors (6.7 vs. 2.3 at 1 minute, 7.5 vs. 3.5 at 5 minutes). None of the infants with Apgars greater than 8 died. Non-survivors were intubated earlier than survivors (62 minutes vs. 631 minutes), suggesting that pulmonary insufficiency occurred earlier in the non-survivor group. None of the survivors developed a preoperative pneumothorax, while 10 of the non-survivors did, 8 being on the right and 2 being bilateral.

The time in the operating room was longer for non-survivors (156 minutes vs. 116 minutes), suggesting a larger hernia requiring a more extensive repair. All the non-survivors required 100% oxygen preoperatively, while the mean fractional inspired oxygen concentration ( $\text{FiO}_2$ ) was significantly lower in non-survivors than survivors for the first arterial blood gas drawn (35 mm Hg vs. 52 mm Hg). The alveolar-arterial oxygen gradient ( $\text{A-aDO}_2$ ) was significantly higher for the non-survivors than survivors both preoperatively (608 vs. 290) and postoperatively (546 vs. 129), suggesting a much larger shunt in the non-survivors. This gradient dropped markedly postoperatively in the survivor group (129 postoperatively from 290 preoperatively), but dropped very little and remained high in the non-survivor group (546 postoperatively from 608 preoperatively).

The high alveolar-arterial oxygen

gradient in non-survivors both preoperatively and postoperatively suggests that the primary problem is pulmonary hypoplasia with shunting, and that removal of the viscera from the thorax in surgery made little change.

The low alveolar-arterial oxygen gradient in the survivors suggests a lesser degree of pulmonary hypoplasia with less shunting. The large drop postoperatively suggests that some of the shunting pre-

operatively was secondary to pulmonary compression of the viscera and that surgery improved the gradient.

Non-survivors required a much higher peak inspiratory pressure (P.I.P.) compared to survivors (44 vs. 22  $\text{cmH}_2\text{O}$ ). Postoperatively, they required a higher peak inspiratory pressure (37 vs. 23  $\text{cm H}_2\text{O}$ ), a higher inspired  $\text{O}_2$  concentration (100% vs. 48%), and a faster ventilatory rate (98/minute vs. 51/minute).

### Summary and Conclusions

Our data suggest that survival is dependent primarily on the condition of the lungs at birth and, although surgery resulted in an improvement in the survivors, it had little effect in the non-survivors. All of the 7 survivors were transferred from referral hospitals. They were operated on at a slightly older age, suggesting that, although this is a surgical emergency, surgery per se does not determine the infant's outcome. It is the effect of the herniated viscera on the prenatal pulmonary development that determines the degree of pulmonary hypoplasia and whether or not the lung is capable of supporting life following birth. In our study, significant lung hypoplasia (45% of expected weight) was found in the 10 non-survivors that underwent autopsy. Immediate recognition of diaphragmatic hernia, accurate resuscitation, stabilization, and transport to a tertiary care center is imperative for optimal outcome.

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## Brief Clinical Note . . .

# Aplastic Anemia and Quinidine

Fortunato V. Elizaga, M.D., F.A.C.P., and Derek K.H. Pang, M.D., Honolulu

Thrombocytopenia is a relatively frequent complication of quinidine therapy. Reports of hemolytic anemia are rare. Much rarer still is quinidine-induced aplastic anemia. We are reporting a case of aplastic anemia following quinidine gluconate therapy.

### Case Report

A 63-year-old woman was admitted to the hospital on January 9, 1982, because of pancytopenia and fever. One month prior to this admission, she had had coronary artery bypass graft surgery. Five days after surgery, she received quinidine gluconate 900 mg a day orally. In addition, she received atenolol, one dose of sulindac, and a few doses of indomethacin.

On January 4, 1982, quinidine gluconate was stopped because of anemia and leukopenia. Two days later she noticed red spots all over her body.

On admission to the hospital, she showed generalized petechiae and some ecchymoses. Her hematocrit was 26%, platelets 1,000/cu mm, WBC 1,200/cu mm, and reticulocyte count 0%. Bone marrow aspirate and biopsy revealed markedly hypoplastic marrow. On the 14th hospital day, the bone marrow showed normal cellularity.

### Discussion

Two documented cases of quinidine-induced hypoplastic marrow have been reported previously. Barzel reported a patient who developed a hypoplastic

marrow following quinidine sulfate therapy.<sup>1</sup> Kelton et al., in addition to describing a patient who developed aplastic anemia, showed by *in vitro* studies direct evidence of antibody-mediated myelosuppression by quinidine.<sup>2</sup>

Indomethacin and sulindac have been associated anecdotally with hypoplastic marrow, but a direct causal relation has yet to be established.

We are presented here a patient with aplastic anemia, most probably quinidine gluconate-induced. The temporal relation of her quinidine use and the onset of aplastic anemia is highly suggestive of cause-and-effect relationship, although the effect of other drugs such as indomethacin and sulindac cannot be completely excluded. Perhaps *in vitro* studies, as were done by Kelton et al., might have added confirming proof.

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Harry L. Arnold Jr., M.D.

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\* \* \*

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\* \* \*

FDA has approved Concept's new thermoplastic enteral feeding tube.

\* \* \*

*The National Gay Task Force "Crisisline" can be called at 1 (212) 807-6016, from 10 a.m. to 4 p.m. Hawaiian standard time when daylight saving time is off. Information about AIDS is available.*

\* \* \*

Some hospitals are now using "Hemo-Temp," a "blood bag monitor," on every unit of blood processed for surgery; Biosynergy, Inc., reports that this new irreversible blood temperature monitor is selling better than they expected.

\* \* \*

*The details are incomprehensible to anyone born in 1912, but the Commission on Professional and Hospital Activities (1968 Green Road, Box 1809, Ann Arbor, Mich. 48106) announces introduction of a "DRG Grouper for PAS+ on Data General Com-*

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puters." Patients can be entered and processed individually or in a batch mode. If you have to make DRG assessments, and use a computer, you need to know this!

\* \* \*

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\* \* \*

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\* \* \*

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"Length of Stay by Diagnosis, by Operation" is the title of a new publication by the Commission on Professional and Hospital Activities that seems indispensable to anyone concerned with the new Prospective Payment regulations; CPHA has been producing such volumes for 18 years, so they must be very good at it by now.

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# Malignant Melanoma of the Vagina in a Black Woman

Peter Fleming, M.D., F.A.C.O.G.;\* Charles H. Yamashiro, M.D., Honolulu;† Justin Stein, M.D.; Nisar Syed, M.D.; Sharon Herron, AART-RT; and Karl Swingle, Ph.D.

*A case report of malignant melanoma of the vagina, Stage IIB (Perez), in a black woman is presented. To the authors' knowledge, this may be the first such case in the medical literature. Control of clinical pelvic disease was achieved by radiation therapy, including the application of an Iridium-192 interstitial pelvic implant, utilizing the Syed-Neblett perineal template technique.*

The annual incidence of malignant melanoma in the United States is 1.5 new cases per 100,000 population,<sup>1</sup> or 1% of all new cancers.<sup>2</sup> Although the sex distribution is equal, it is 2-4 times as common among whites as blacks.

The vagina is an unusual location for primary malignant melanoma. Norris and Taylor reported 3 vaginal melanomas per 1,000 cutaneous melanomas at the A.F.I.P.<sup>3</sup> DiSaia noted that malignant melanoma of the vagina comprises less than 0.5% of all vaginal malignancies.<sup>4</sup>

Although nevi and melanocytes are not generally present in the vagina, the phenomenon does occur, as documented in case reports by Nicholson,<sup>5</sup> Norris and Taylor,<sup>3</sup> Batsakis and Dito,<sup>6</sup> and Nigogosyan et al.<sup>7</sup> Ehrmann et al.<sup>8</sup> and Norris and Taylor<sup>3</sup> demonstrated specific junctional change in adjacent mucosa, confirming the presence of a primary malignant melanoma.

This disease occurs at an average age of 55 years, presenting with vaginal bleeding, serosanguinous discharge, or the presence of a mass.<sup>9</sup>

In 1976, Morrow and DiSaia surveyed the literature and found that no case of malignant melanoma of the vagina in a black woman had been reported.<sup>9</sup> Chung et al., in 1980, reported on malignant melanoma of the vagina in 19 cases: 18 patients were white and one was black.<sup>10</sup> The authors stated that 11 patients were treated at Memorial Sloan Kettering Cancer Center between 1935 and 1976. Eight additional cases were reported to the Connecticut Tumor Registry between 1934 and 1976.

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## Case Report

A documented case of primary malignant melanoma of the vagina in a black woman is presented herein. The patient, B.P.-2845, a 71-year-old woman, G1 P1 Ab0, menarche age 13 years, menopause age 53 years, was well until March 1980 when she noted the onset of daily vaginal spotting. Three weeks later, she consulted her physician who noted the presence of a vaginal tumor. Biopsy of this lesion demonstrated malignant melanoma characterized by large epithelioid-type cells with voluminous basophilic cytoplasm and prominent hyperchromatic nuclei. Scattered cells and macrophages contained brown pigment and there were many mitotic forms (Figs. 1 and 2). Fontana silver stain demonstrated many scattered cells, resembling tumor cells and macrophages, that contained black staining

granular pigment. Brain scan, liver-spleen scan, bone scan, and CT scan of the pelvis at another hospital reportedly were negative for evidence of metastatic disease. The patient was then admitted to the Long Beach Veterans Administration Hospital in April 1980. Review of the past medical history revealed adult-onset diabetes mellitus, mild hypertension, and osteoarthritis. The patient's mother was known to have had carcinoma of the breast. A 40-pack-year history of cigarette smoking was elicited.

Physical examination revealed a most pleasant 71-year-old woman in no acute distress. She was 5'5" in height and weighed 136 pounds. Blood pressure was 140/90. There were several light brown, 1 cm, pigmented benign moles on the right cheek, right shoulder, and right thigh. No

(Continued on page 408)

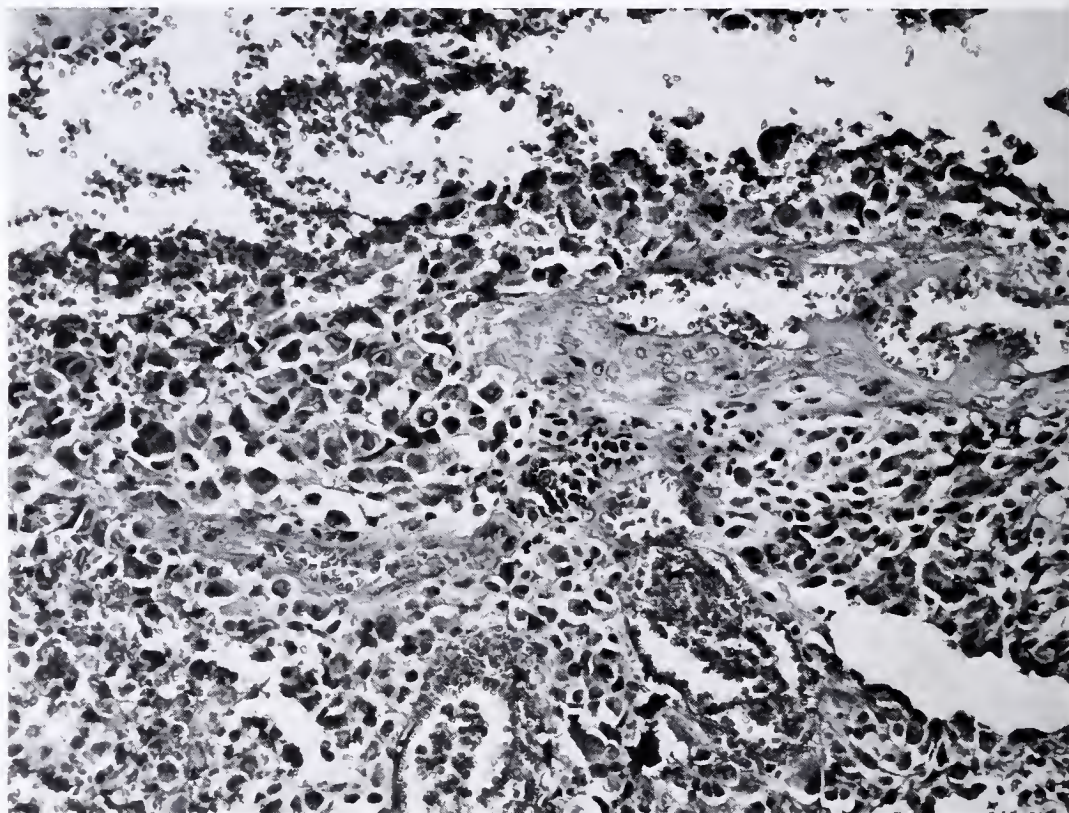


Figure 1: Malignant melanoma of the vagina characterized by large epithelioid-type cells with voluminous basophilic cytoplasm and prominent hyperchromatic nuclei (H&E, x 200).

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adenopathy or hepatosplenomegaly was noted. Pelvic examination revealed a 3 cm x 2.5 cm, black, nodular, friable lesion on the left anterolateral vaginal wall, with 3 adjacent satellite lesions, one within 0.5 cm of the urethral orifice. There was induration of the left paravaginal tissue without fixation to the pelvic sidewall. Chest X-ray revealed some interstitial changes but no evidence of metastatic disease. An intermediate PPD skin test was positive, measuring 10 mm induration. The patient was classified as Malignant

Melanoma of the Vagina, Stage IIB (Perez).

In June 1980, intravaginal radium therapy was carried out, utilizing a Burnett vaginal applicator, loaded with three, 2-cm long, 10-mg radium sources, delivering 2400 rad at the vaginal surface (960 rad at 1-cm depth) in 24 hours elapsed time. Subsequently, she received external pelvic irradiation, 3240 rad mid-depth dose, 180 rad per fraction, 15 x 14 cm APPA portals, 6 MV linear accelerator, 18 fractions, 46 elapsed days, initiated June 9 and completed July 24, 1980. A 25-day rest interval followed delivery of 2520 rad, due to marked vaginal radia-

tion mucositis. The rationale for the initial brachytherapy procedure was not stated in the records.

The patient was readmitted to LBVAH on July 29, 1980, for correction of hypokalemia (2.9 meq/l), believed to be secondary to diuretic medication for hypertension. Pelvic examination demonstrated a 2.5 cm x 2 cm, black, irregular, friable mass on the left anterolateral vaginal wall. A 1 cm x 2 cm perirectal abscess was also present and was incised and drained without complication.

On September 1, 1980, the patient was admitted to the University of California, Irvine, Medical Center for further therapy. Pelvic examination demonstrated a 5 cm x 1 cm x 1 cm, white-gray, necrotic mass in the left anterolateral vagina, extending from a point 1 cm distal to the vaginal fornix to the region just proximal to the urethral meatus. A 0.5 cm, black, pigmented satellite lesion was present in the left anterolateral vaginal fornix. The uterine cervix was unremarkable and the uterus was midplane in position and normal in size. There was left paravaginal induration extending, but not fixed, to the inferior left pubic ramus and ischium. There was nodular right paravaginal and parametrial induration, not extending to the right pelvic sidewall.

On September 2, an afterloading Ir-192 interstitial implant, Syed-Neblett perineal template technique, was performed under general anesthesia.<sup>11</sup> The implant consisted of 41 guide needles, 4 cm deep to the mucosal surface of the posterior cervical lip, 15 cm deep to the perineum. Each guide needle was determined to be loaded with a teflon ribbon containing 13 Ir 192 seeds at 1 cm intervals. On September 3, at 4 p.m., 21 guide needles in the left half of the implant were loaded (0.42 mgRaeq per seed; 114 mgRaeq total activity). At 4 a.m., September 4, the 21 ribbons were removed from the left half of the implant, and 20 ribbons were then inserted into the right half of the implant (108.7 mgRaeq total activity). The latter ribbons were then removed at 5 a.m., September 5, and, subsequently, 21 ribbons were reloaded into the left half of the implant at 5:15 a.m., September 5. All sources were removed at 6 p.m., September 5. The computerized effective minimum tumor dose was 2500 rad, 100 rad/hour, 25 hours elapsed time. The effective maximum tumor dose was 3750 rad, 150 rad/hour (Fig. 4).

Examination 2 weeks following the implant demonstrated multiple vaginal adhesions, a confluent mucositis, and marked suburethral edema. The patient noted urinary frequency, dysuria, and 3-4 stools a day. At 4 weeks post-implant, the radiation cystitis and proctitis had subsided. A white, necrotic plaque on the anterior vaginal wall corresponding to

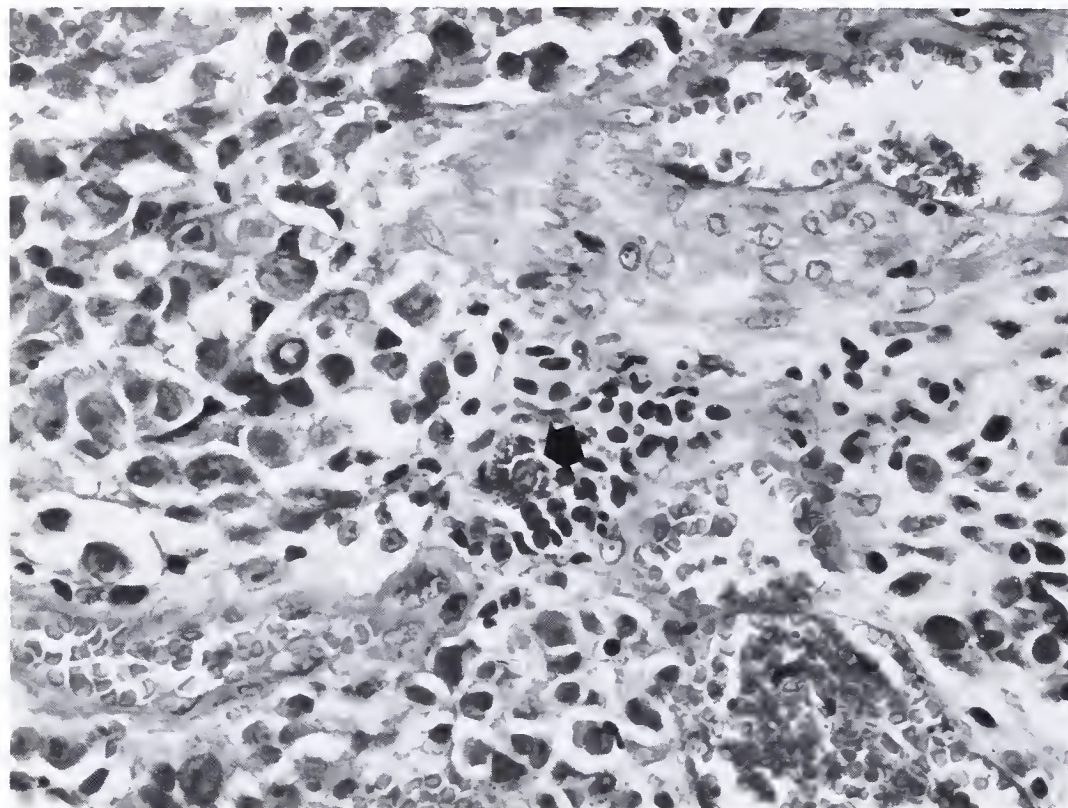


Figure 2: Malignant melanoma of the vagina: arrow indicates locus of brown pigment (H&E, x 400).

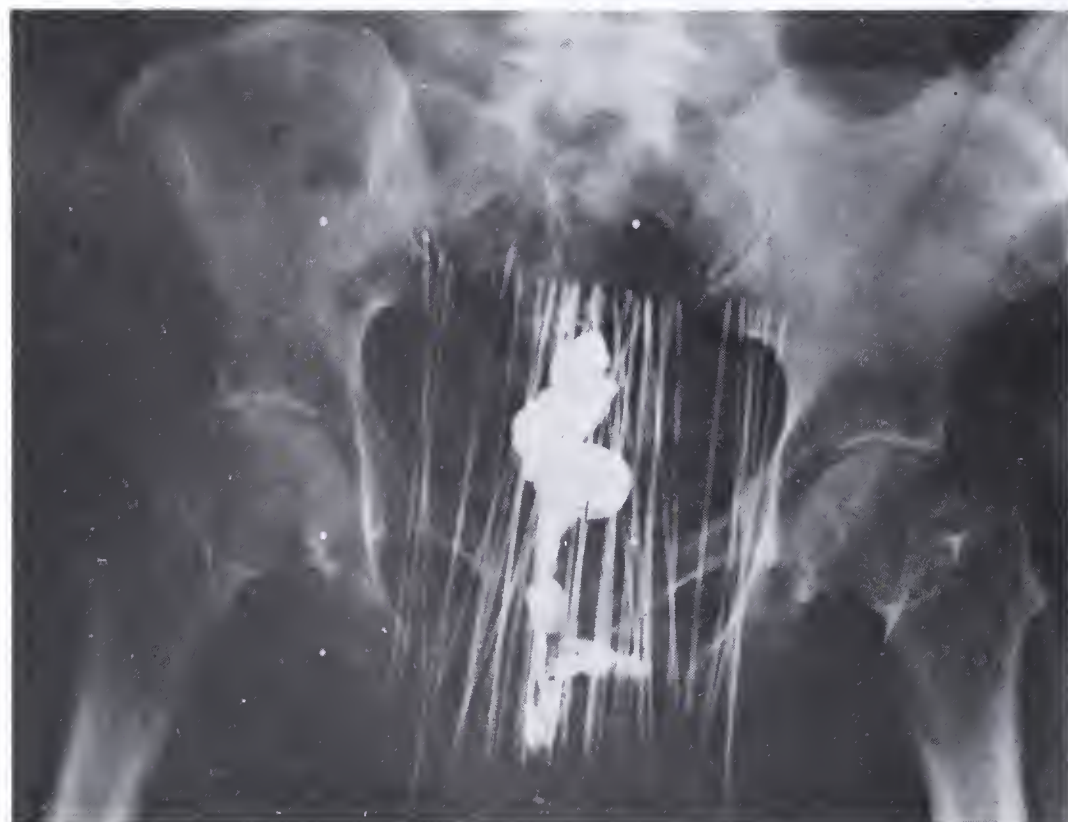


Figure 3: Anteroposterior radiograph of perineal template implant, Syed-Neblett technique.

(Continued on page 410)



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the original tumor site, measuring 3 cm x 1 cm, was present. There was smooth perilesional induration surrounding the necrotic plaque and smooth left paravaginal induration, fixed to the left pubic ramus. At 6 weeks post-implant, incomplete re-epithelialization of the necrotic plaque was noted. The proximal pigmented satellite lesion was unchanged. The paravaginal tissues were soft to palpation. At 11 weeks post-implant, the patient complained of severe right hip and right anterior thigh pain on weight-bearing, a diminished appetite, and an 8-pound weight loss. Multiple filmy vaginal adhesions were present. The white, necrotic anterior vaginal mass measured 2 cm x 1 cm x 0.5 cm. At 14 weeks post-implant, RUQ abdominal pain developed. A chest X-ray revealed a rounded, 1 cm radiodensity in the RLL, suspicious for metastatic disease. The patient was readmitted to LBVAH on December 22, 1980, at which time a liver radionuclide scan demonstrated multiple focal defects consistent with metastases. A radionuclide brain scan and bone scan were negative for evidence of metastases. A myelogram to evaluate the persistent right hip and thigh pain was unremarkable. Chemotherapy was then instituted, i.e., DTIC, 240 mg IV on days 1-5; Vincristine, 2 mg IV on day 1; and BCNU, 240 mg IV on day 1. A second course of chemotherapy was initiated on February 11, 1981. A repeat liver

scan in March revealed multiple large focal defects, perhaps slightly larger in size when compared to previous studies. The chest X-ray was unchanged. Pelvic examination demonstrated a vaginal vault 6 cm in depth following lysis of film adhesions. No gross tumor was visible and the anterior vaginal wall induration was unchanged. Firm, smooth bilateral parametrial induration was present. Hydroxyurea chemotherapy also was begun in March.

The final hospital admission began in April 1981 for progressive weakness and mental confusion. The abdomen was markedly distended and the liver edge was palpable at the pelvic brim. There was radiographic evidence for progression of the lung metastases. A CT head scan revealed no gross abnormality. The patient became progressively obtunded, and expired in May 1981. Permission for autopsy was not granted.

### Discussion

This report describes a case of primary malignant melanoma of the vagina in a black woman. Apparently, it is the first such case to be definitively documented in the medical literature. The method of treatment utilized in this regional presentation of malignant melanoma was the Syed-Neblett perineal template technique with Ir-192 as the radioactive source.

Clinical control of extensive pelvic tumor was obtained for the remaining 8 months of the patient's life.

### ACKNOWLEDGMENT

The authors greatly acknowledge the histopathology studies provided by James W. Redwine, M.D.

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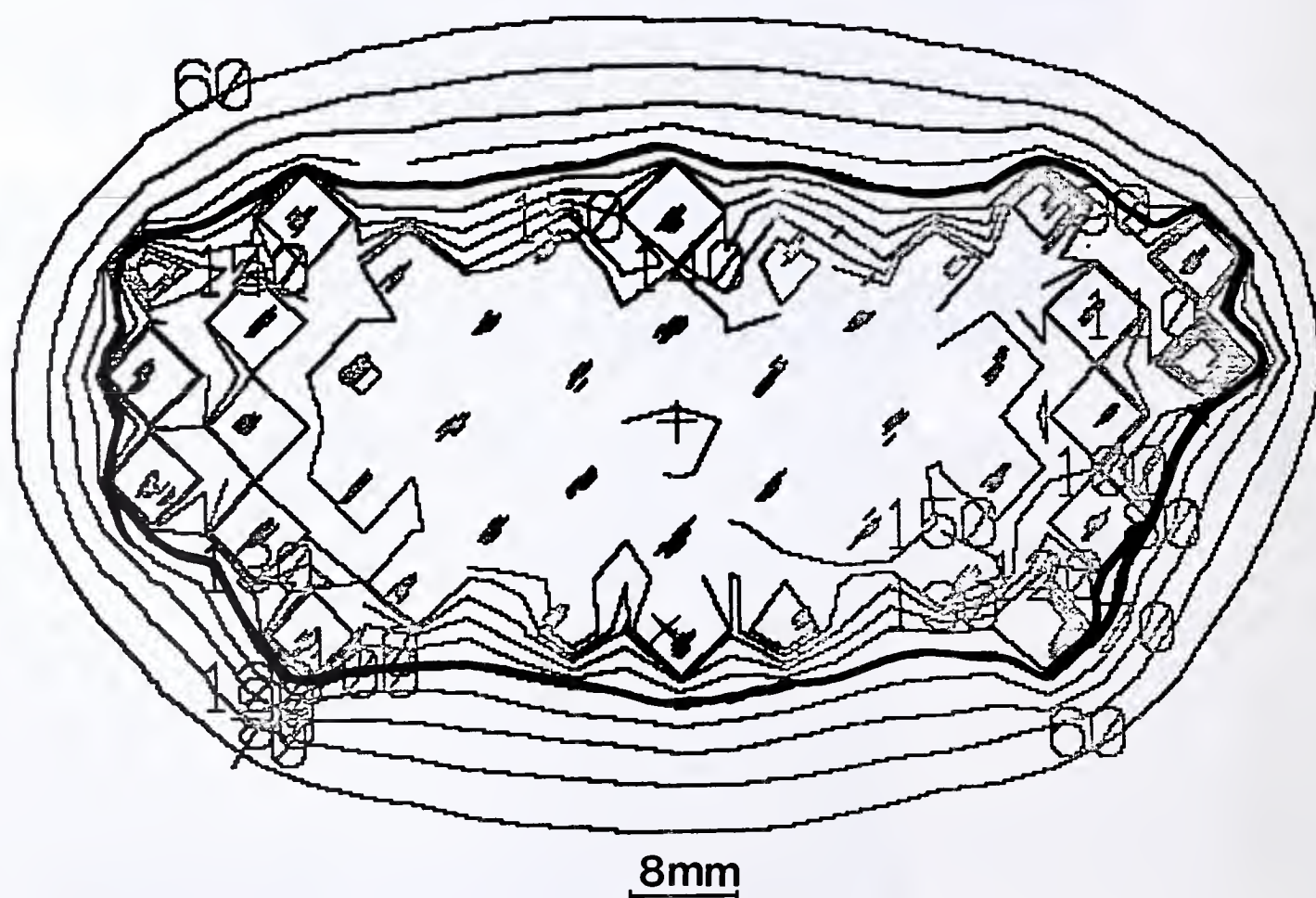
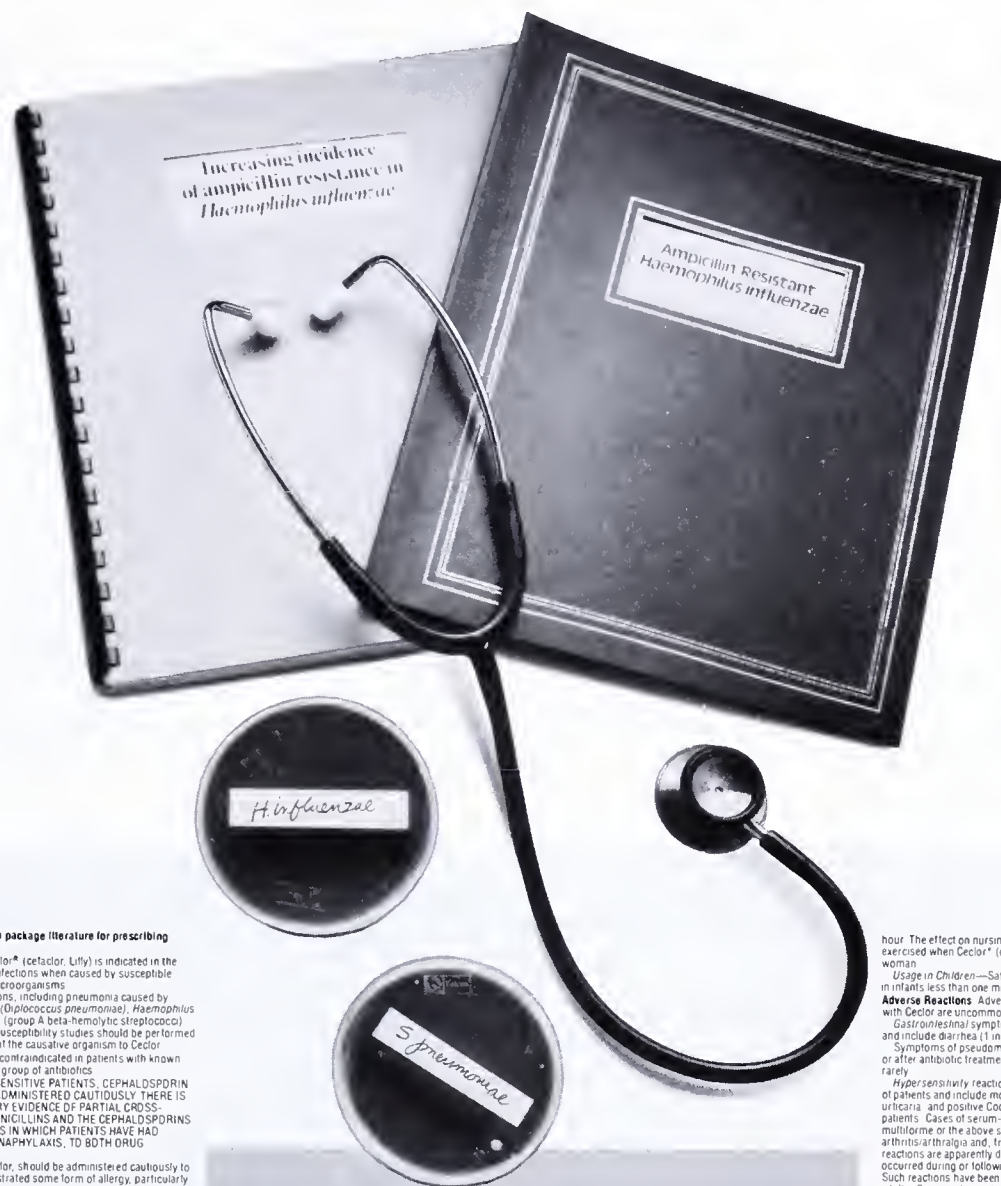


Figure 4: Computerized dose-rate distribution plot (mid-transverse plane). Dark line indicates estimated minimum tumor dose-rate (100 rad/hr).



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## Brief Summary Consult the package literature for prescribing information

**Indications and Usage** Cefclor® (cefclor, Lilly) is indicated in the treatment of the following infections when caused by susceptible strains of the designated microorganisms:

Lower respiratory infections, including pneumonia caused by *Streptococcus pneumoniae* (*Diplococcus pneumoniae*), *Haemophilus influenzae*, and *S. pyogenes* (group A beta-hemolytic streptococcus).

Appropriate culture and susceptibility studies should be performed to determine susceptibility of the causative organism to Cefclor.

**Contraindication** Cefclor is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

**Warnings** IN PENICILLIN-SENSITIVE PATIENTS, CEPHALOSPORIN ANTIBIOTICS SHOULD BE ADMINISTERED CAUTIOUSLY THERE IS CLINICAL AND LABORATORY EVIDENCE OF PARTIAL CROSS-ALLERGENICITY OF THE PENICILLINS AND THE CEPHALOSPORINS AND THERE ARE INSTANCES IN WHICH PATIENTS HAVE HAD REACTIONS, INCLUDING ANAPHYLAXIS, TO BOTH DRUG CLASSES.

Antibiotics, including Cefclor, should be administered cautiously to any patient who has demonstrated some form of allergy, particularly to drugs.

Pseudomembranous colitis has been reported with virtually all broad-spectrum antibiotics (including macrolides, semisynthetic penicillins, and cephalosporins), therefore, it is important to consider its diagnosis in patients who develop diarrhea in association with the use of antibiotics. Such colitis may range in severity from mild to life-threatening.

Treatment with broad-spectrum antibiotics alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is one primary cause of antibiotic-associated colitis.

Mild cases of pseudomembranous colitis usually respond to drug discontinuance alone. In moderate to severe cases, management should include sigmoidoscopy, appropriate bacteriologic studies, and fluid, electrolyte, and protein supplementation. When the colitis does not improve after the drug has been discontinued, or when it is severe, oral vancomycin is the drug of choice for antibiotic-associated pseudomembranous colitis produced by *C. difficile*. Other causes of colitis should be ruled out.

**Precautions** **General Precautions**—If an allergic reaction to Cefclor occurs, the drug should be discontinued and, if necessary, the patient should be treated with appropriate agents, e.g., pressor amines, antihistamines, or corticosteroids.

Prolonged use of Cefclor may result in the overgrowth of nonsusceptible organisms. Careful observation of the patient is essential. If superinfection occurs during therapy, appropriate measures should be taken.

Positive direct Coombs' tests have been reported during treatment with the cephalosporin antibiotics. In hematologic studies or in transfusion cross-matching procedures when antiglobulin tests are performed on the minor side or in Coombs' testing of newborns whose mothers have received cephalosporin antibiotics before parturition, it should be recognized that a positive Coombs' test may be due to the drug.

Cefclor should be administered with caution in the presence of markedly impaired renal function. Under such conditions, careful clinical observation and laboratory studies should be made because safe dosage may be lower than that usually recommended.

As a result of administration of Cefclor, a false-positive reaction for glucose in the urine may occur. This has been observed with Benedict's and Fehling's solutions and also with Clinistix® tablets but not with Test-Tape® (Glucose Enzymatic Test Strip, USP, Lilly).

Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

**Usage in Pregnancy**—Pregnancy Category B—Reproduction studies have been performed in mice and rats at doses up to 12 times the human dose and in ferrets given three times the maximum human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefclor. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

**Nursing Mothers**—Small amounts of Cefclor have been detected in mother's milk following administration of single 500-mg doses. Average levels were 0.18, 0.20, 0.21, and 0.16 mcg/ml at two, three, four, and five hours respectively. Trace amounts were detected at one

**Some ampicillin-resistant strains of *Haemophilus influenzae*—a recognized complication of bacterial bronchitis\*—are sensitive to treatment with Cefclor.<sup>1-6</sup>**

In clinical trials, patients with bacterial bronchitis due to susceptible strains of *Streptococcus pneumoniae*, *H. influenzae*, *S. pyogenes* (group A beta-hemolytic streptococci), or multiple organisms achieved a satisfactory clinical response with Cefclor.<sup>7</sup>

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hour. The effect on nursing infants is not known. Caution should be exercised when Cefclor® (cefclor, Lilly) is administered to a nursing woman.

**Usage in Children**—Safety and effectiveness of this product for use in infants less than one month of age have not been established.

**Adverse Reactions** Adverse effects considered related to therapy with Cefclor are uncommon and are listed below.

Gastrointestinal symptoms occur in about 2.5 percent of patients and include diarrhea (1 in 70).

Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

Hypersensitivity reactions have been reported in about 1.5 percent of patients and include morbilliform eruptions (1 in 100), Pruritus, urticaria, and positive Coombs' tests each occur in less than 1 in 200 patients. Cases of serum-sickness-like reactions (erythema multiforme or the above skin manifestations accompanied by arthralgia and, frequently, fever) have been reported. These reactions are apparently due to hypersensitivity and have usually occurred during or following a second course of therapy with Cefclor. Such reactions have been reported more frequently in children than in adults. Signs and symptoms usually occur a few days after initiation of therapy and subside within a few days after cessation of therapy. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.

Other effects considered related to therapy included eosinophilia (1 in 50 patients) and genital pruritus or vaginitis (less than 1 in 100 patients).

**Causal Relationship Uncertain**—Transitory abnormalities in clinical laboratory test results have been reported. Although they were of uncertain etiology, they are listed below to serve as alerting information for the physician.

**Hepatic**—Slight elevations of SGOT, SGPT, or alkaline phosphatase values (1 in 40).

**Hematopoietic**—Transient fluctuations in leukocyte count, predominantly lymphocytosis occurring in infants and young children (1 in 40).

**Renal**—Slight elevations in BUN or serum creatinine (less than 1 in 500) or abnormal urinalysis (less than 1 in 200).

(061782R)

\*Many authorities attribute acute infectious exacerbation of chronic bronchitis to either *S. pneumoniae* or *H. influenzae*.

Note: Cefclor is contraindicated in patients with known allergy to the cephalosporins and should be given cautiously to penicillin-allergic patients.

Penicillin is the usual drug of choice in the treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever. See prescribing information.

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## Book Reviews



Ed: Douglas G. Massey, M.D.

**Current Medical Diagnosis and Treatment 1983.** By Marcus A. Krupp, M.D., and Milton J. Chatton, M.D. 1,130 pp., index. Lange Medical Publications, Los Altos, Calif. \$24.

Two editors with some 25 contributors, mostly from the West Coast, have undertaken the annual revision (since 1962) of this text of diagnosis and treatment of selected multidisciplinary subjects. The thread of internal medicine links the contributions from obstetrics and gynecology, surgery, psychiatry, epidemiology, pediatrics, and dentistry, arranged in a relatively haphazard but clinically oriented way. Fortunately, an index of 37 pages, three columns each page, permits one to find one's way with relative ease. An appendix is included with a curious mixture of information and an excellent summary of a number of laboratory find-

ings: normal values, precautions, physiology and interpretation. The use of varying types of print from pica to elite accommodates extensive detail, and good binding permits easy handling. I would particularly recommend this book to the general internist.

D.G.M.

**Basic and Clinical Pharmacology.** By B.G. Katzung, M.D., Ph.D. 815 pp. Illustrations. Lange Medical Publications, Los Altos, Calif., 1982. \$23.50.

This book is an excellent successor to the Review of Medical Pharmacology editions published by Lange. Its new title aptly describes what is in store for the reader. The chapters, all well written and replete with tables, lists, and diagrams, cover nearly all that one wishes to know about medical pharmacology.

The reason why this book succeeds is that it is written predominantly by physicians who understand pharmacology. There has always been a need to present the whys and the wherefores of drug usage ever since we emerged from the age of empiricism in the mid-'60s but there weren't many practitioners who could translate the data of basic pharmacology into meaningful clinical terms. The book's clinical perspective gives this latest Lange effort an advantage over other pharmacology texts used in teach-

ing second-year medical students.

I recommend this book for the library of every medical student and practitioner.

Vincent Aoki, M.D.

**Environmental and Occupational Medicine.** By William N. Rom, M.D., M.P.H. (ed.) 1015 pp. Little Brown & Co., Boston, 1983. \$75.

Is this a text in the footsteps of that classic, "The Diseases of Occupations" by Donald Hunter?

The contents proceed logically from a discussion of the discipline of environmental and occupational medicine, through mechanisms of disease and the organ system involved, particularly respiratory. Then each noxious substance is examined and control measures are discussed. I liked the section on the biological effect of asbestos, but wished for more emphasis on the associated obstructive syndrome to reflect its importance. The grammatically incorrect, "en face," is perpetuated. Also, the emphasis on bronchial provocation testing in asthma is welcome. A good balance of other than American references is included.

The book is well designed and has fine histological and electron microscopic reproductions. I would recommend this book for occupational medicine, internal medicine, and for environmentalists.

D.G.M.

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## Who's Minding the Store?

The A.M.A. discovered that 40% of the physicians in a recent survey did not know the meaning of "DRGs." The impact of DRGs (Diagnosis-Related Groups) and PPOs (Preferred Provider Organizations) on the practice of medicine, as we know it today, will be profound. Yet, many physicians, who will be affected by these measures to cut health care costs, seem oblivious, and one has to ask, "Who's minding the store?"

At the October A.M.A. Auxiliary Leadership Confluence in Chicago, Dr. Courie, chairman of the A.M.A. Board of Trustees, and Dr. Sammons, executive secretary to the A.M.A., offered some insights to these problems. Attending from Hawaii were JoAnn Lundborg (Hawaii), Leanna Stodd (Maui), and Nancy Simmons (Honolulu).

Dr. Sammons believes that the 10% of the gross national product now being spent on health care is not too high for the quality of medical care being delivered. He pointed out that, while the physician is often the scapegoat in discussions of health care costs, only 24% of every health care dollar spent goes to a "provider." That provider may be an M.D. or chiropractor, optometrist, etc. The M.D. receives only 11-12¢ of the health care dollar. The ever-increasing number of physicians poses additional problems.

As legislative restrictions increase through DRGs, patient care will ultimately be affected and research severely limited. Auxiliary members nationwide join with the medical societies of this country in supporting the free practice of medicine through dissemination of information, membership recruitment into the A.M.A. and Auxiliary, and promotion of good health legislation. Someone is minding the store—your professional organization—but we all need to help.

Nancy Simmons

\* \* \*

## Annual Meeting

The Hawaii Medical Association Auxiliary and the Auxiliary to the Honolulu County Medical Society hold their joint annual meeting December 8, 1983, at the Hilton Hawaiian Village Tapa Ballroom,

with installation of the following new officers for 1984:

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Leanna Stodd  
Vice President for  
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Vice President for Historical  
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Matters ..... Nancy Simmons

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#### County Medical Society

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President-elect ..... Emily Callan  
First Vice  
President ..... Tina Semenza  
Second Vice  
President ..... Bonnie DeJournett  
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At a festive holiday luncheon and program titled "Fashions For All Ages," creations by Flora of Body Wrap, Inc., are featured with commentary by Susan Hindle. In Bloom, a new children's boutique at the Ward Centre, presents a children's fashion show. Fashions for travel, business, holidays, and everyday are sure to tempt.

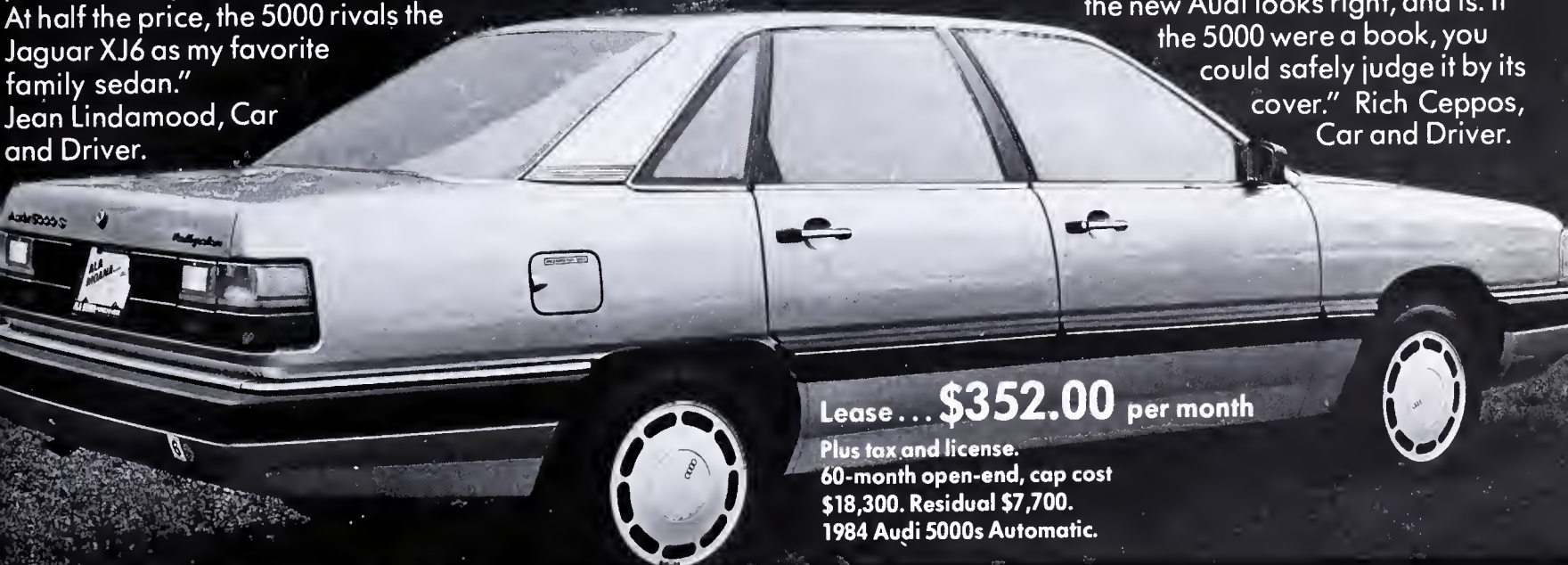
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# Variation in Infant Mortality Rates Among Census Tracts in Hawaii

S. Patricia Simpson, Ph.D., Honolulu\*

• The infant mortality rate in the state of Hawaii is 106% greater than in the quartile of census tracts with the most favorable indicators of perinatal health. If the excess mortality associated with low socioeconomic status could be prevented, there would be 92 fewer infant deaths per year in Hawaii.

For many years now the infant mortality rate in Hawaii has been either the lowest or very close to the lowest among all of the United States. This is largely due to the excellent medical facilities available. However, the mortality rate shows great variation within the state, and there is a marked disparity between privileged and disadvantaged groups. These differences

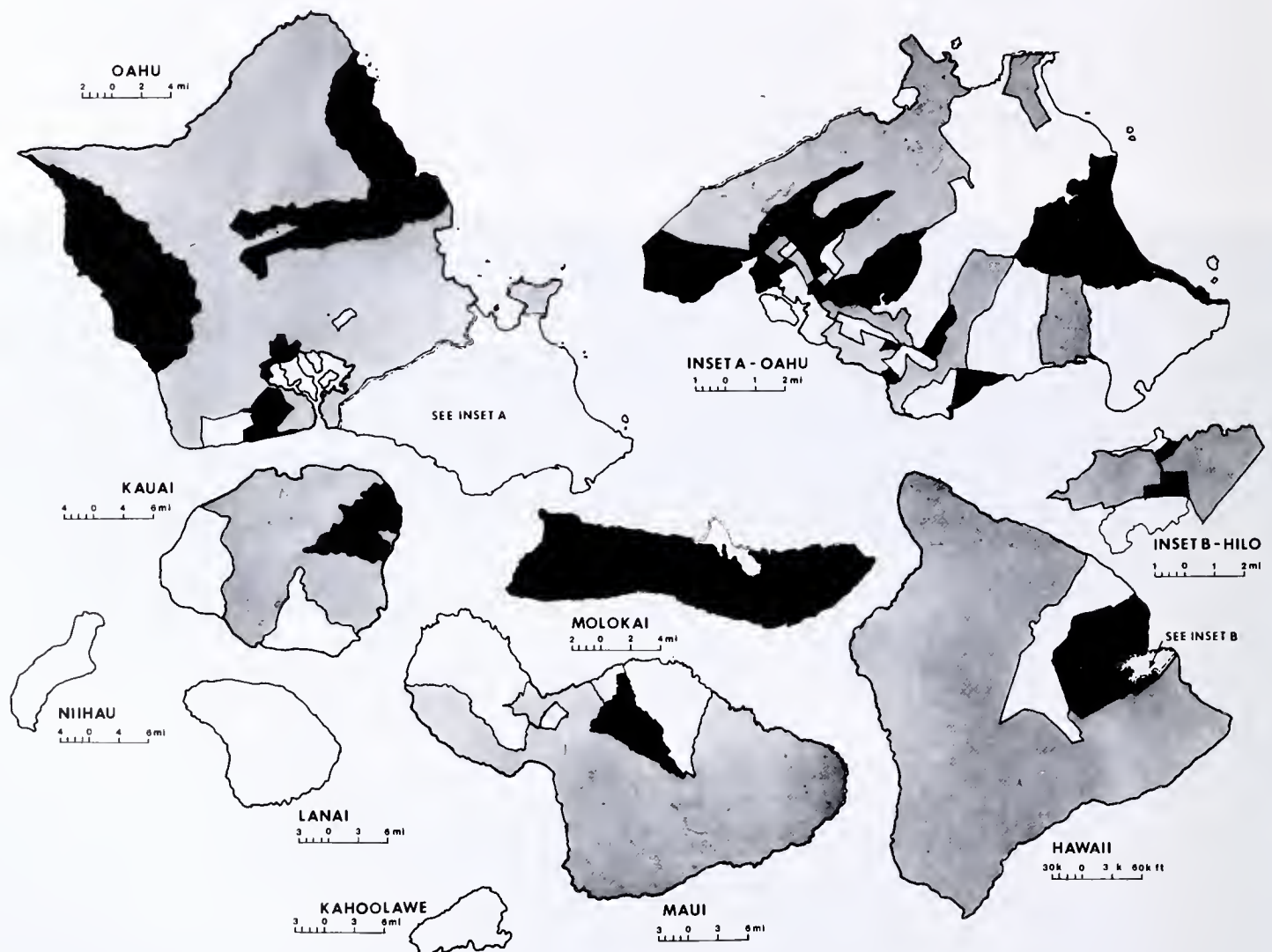
may be attributed to unequal provision of medical services, and to social factors that determine their use and affect health.

## Data and Methodology

During 1978 and 1979, there were 34,330 live births registered in the state of Hawaii, of which 358 subsequently were

deaths occurring outside the state could not be ascertained, they are unlikely to exceed this number.

Multiple regression techniques were used to condense the information on each birth into 6 variables.<sup>1</sup> A variable describing infant death takes the value 1 if the infant is registered as an infant death and 0 otherwise. Preconceptional factors in-



Population Genetics Laboratory, University of Hawaii

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Accepted for publication January 1983.

registered as infant deaths. The infant death records were linked to the live births using the birth certificate number, with the exclusion of infants born outside the state. Only 7 deaths were of infants born outside the state, and although

clude socioeconomic factors such as education, age, and race of the parents, and includes the mother's reproductive history. Postconceptional factors include factors such as sex, which are determined  
(Continued on page 416)

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at conception, and complications that occur during pregnancy and labor. The remaining variables are the Apgar score, length of gestation, and birthweight corrected for race. The correlations between the variables are given in the Table. The Apgar score is a good predictor of infant death, whereas preconceptional factors, which essentially measure socioeconomic status, have little predictive value.

tion is a tract, and the mean of each variable is weighted by the number of births in the tract. Only the Apgar score, birth weight, and postconceptional factors contributed significantly to the risk. The risks associated with the tracts are illustrated in the Figure. The 40 tracts with the greatest risk are darkly shaded and the 40 with the lowest risk are unshaded. The remaining 80 tracts are lightly shaded.

TABLE. Correlations between variables related to infant death (ID)

	Birth weight (BWT)	Gestation (GST)	Apgar score (APG)	Pre-conception (PRE)	Post-conception (PST)
ID	.4304	.3898	.5214	.0619	.2898
BWT		.5472	.4671	.0611	.2593
GST			.4261	.0597	.1634
APG				.0494	.2440
PRE					.0610

The State of Hawaii Department of Health classifies births by the census tract of mother's residence. There were no births in 4 tracts, leaving 160 tracts, plus a category for "residence unknown." The 5 independent variables were combined using group regression to find a measure of the risk associated with each tract. In the group regression the unit of observa-

#### Analysis and Discussion

The 40 tracts with the lowest risk have high socioeconomic status. These tracts have a mortality rate of 5 per 1000. If all births had been subject to these advantageous circumstances, there would have been only 174 deaths throughout the state, instead of the observed 358. The excess of 184 deaths, more than half of all

the infant deaths, is attributable to adverse socioeconomic conditions.

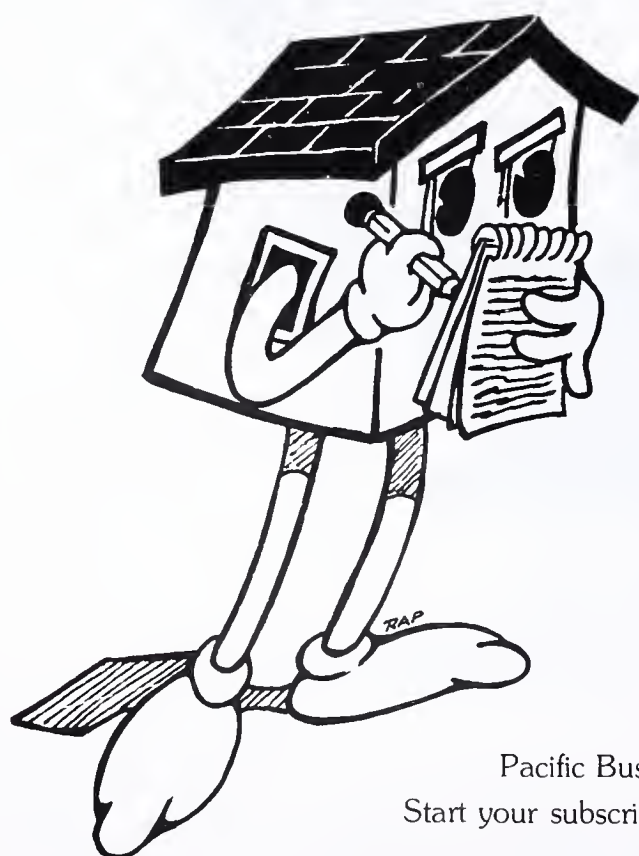
The birth certificate in Hawaii uses maternal and paternal education as its main measure of socioeconomic status, yet education and other preconceptional factors recorded on the birth certificate form a very poor predictor for infant death. On the other hand, socioeconomic status as measured by the census tract of the mother's residence is a fairly good predictor of mortality. Although it pinpoints pregnancies at greatest risk, it does not indicate what types of intervention would be most effective in reducing the infant mortality rate. A task force of the National Institute of Child Health has concluded that the poor infant mortality rate of the United States is due to social factors causing prematurity, and not to the quality of health care available to the newborn.<sup>2</sup>

#### ACKNOWLEDGMENT

I would like to thank Dr. T.A. Burch at the State of Hawaii Department of Health for making these data available. This work was supported by grant GM 17173 from the U.S. National Institutes of Health.

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2. Quillan EJ, Little AB, Oh W, Catz C, Alexander D, Cornblath M: Pregnancy, birth and the infant. Child health and human development: an evaluation and assessment of the state of the science. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, 1982.



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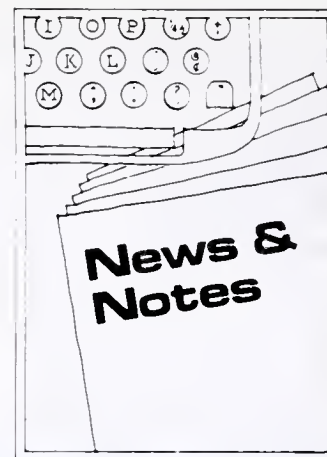




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Henry Yokoyama, M.D.

## Life in These Parts

**N. Fred Myers**, Honolulu internist, medical director of a new lab in town called Rare Reagents, is looking for donors with certain types of antibodies. e.g., Rh-negative women with antibodies for an Rh-positive fetus . . .

The John A. Burns School of Medicine signed a \$4.5 million contract with AID (Agency for International Development) to extend new health care techniques to developing countries.

City Chief Medical Examiner **Charles Odom**, who has long been trying to get money to renovate his dilapidated morgue in Iwilei, may still not get his wish, even though Council members were given the grand tour by Charley . . . Council members cringed to see bodies stacked on top of each other for lack of gurneys and without sheets . . . "This is awful!" remarked Council member Welcome Fawcett . . . Marilyn Bornhorst asked, "Don't they even put sheets on them?" Council members were shocked, but seemed to feel that problems of the living had higher priority . . .

Hal "Aku Head Pupule" Lewis, our favorite DJ, died at age 66 in July . . . How can we forget his last April Fool's day joke . . . Several thousand of his listeners turned out to view an April 1 Easter Parade . . . The coconut wireless will never be the same . . .

### The 1980 Census:

In Hawaii, we're older, more childless, more divorced and more foreign-born than we used to be (i.e., compared to 1970).

Hawaii at the top: 2nd lowest death rate—5 deaths per 1,000 in Hawaii vs. 8.5 deaths nationally. 2nd in income—\$20,473 for the median Hawaii household vs. \$16,841 nationally . . . 7th highest birth rate—19.2 births per 1,000 in Hawaii vs. 15.9 nationally . . . 8th in physicians per capita—207 doctors per 100,000 vs. 185 nationally . . .

Hawaii at the bottom: 47th in proportion of senior citizens—8% 65 or older vs. 11% nationally . . . 47th in hospital beds—411 beds per 100,000 population vs. 602 nationally . . . 4th highest in state and local tax revenues—\$1,393 per person vs. \$1,079 nationally . . . 40th in

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median age—28.3 years in Hawaii vs. 30 nationally . . .

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We've got the warmest weather, high incomes, better-paid teachers and more doctors than average . . . but housing is the most expensive, taxes are high and fewer of us own our homes . . .

## Hors de Combat

SHPDA (State Health Planning and Development Agency) drew heavy flak from the legislature for approving two proposed hospitals for Leeward Oahu . . . (a 116-bed facility in Aiea and a 136-bed hospital in Waipahu) . . . HMSA and the Hawaii Business Health Council shared House Health Committee Chairman Byron Baker's views: "Outrageous surrender to community pressures" and "an action which raises gravest doubts about the agency's continued usefulness" . . .

## Entrepreneurs

Big Island surgeon **William Rassman**, involved in the Hawaii wind energy movement, has linked up with Control Data and The Synetics Group in a joint venture to build large-scale wind farms in the U.S. The venture is called Renewable Energy Ventures, Inc. (REV), and will be headquartered in Washington, with branch offices in California and Hawaii . . . In Hawaii, plans call for a total of 45 wind turbines on the Big Island . . .

Kauai physician **Roger Netzer** has been involved in beefalo breeding which, in 1976, seemed to have a bright future. Beefalo, hybrid between the bison and a cow, were first bred in 1966 by a California cattle rancher. Roger said, "Interest has waned in the past two years because of the controversy over what constitutes a beefalo . . . and the beefalo breeding methods confused ranchers here and they didn't want to bother with them."

Surgicare of Hawaii, Inc., a walk-in surgical center, has been recommended for approval by the State Health Coordinating Council's Certificate of Need Review Panel. Principals in the venture are **James Doyle, John Edwards, Robert Childs**, and CPA Charles Ferris . . .

## Meeting Notes

Notes on the HMA 127th Annual Scientific Meeting "New Directions in Medicine" Hotel Inter-Continental Maui, Wailea, Maui, October 8-10 . . .

We cannot recall ever having enjoyed an annual meeting more . . . The scientific sessions moderated by **Thomas Kosa** were never so stimulating and the House of Delegates' sessions were short

(Continued on page 420)

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and orderly, as Speaker of the House **Tom Cahill** kept things rolling along . . . The weather was nearly perfect for both the golf and tennis tournaments (except perhaps for some gusty winds on the tennis courts and those impossible greens on the Wailea Blue Course) . . . We even got a little sightseeing in driving the Avis rental Dodge station wagon, which ran better than our own Supra . . . It was the first sunrise we had ever witnessed from the Haleakala summit (though getting up at 3 a.m. was rather painful), and we were surprised to find the Iao Needle area converted into a lovely park . . . Unfortunately we could not stay over for the annual banquet, but Sportsman's Night was the greatest . . . We thank all the Maui physicians involved for the perfect long weekend spent—especially **Sakae Uehara** et al. . . . And we would like to go back again.

Maui general surgeon **John Withers** was named Physician of the Year at the annual banquet. John has authored a weekly medical column, "Take Two Aspirins," in the Maui News since 1981 and was key organizer of the 1983 Kihei Health Fair . . . He has been chief of staff and chief of surgery at Maui Memorial Hospital and is a past president of Maui County Medical Society . . .

Our favorite medical writer, **Pat Hunter**, has once again won the HMA's award for distinguished medical reporting for her February 14 article, "Micro-surgery's magic world" . . . We can recall how we had to alternate the awards between Advertiser's **Pat Hunter** and Star Bulletin's **Tomi Knaeffler** each year because, both being such superb medical writers, it was impossible to judge who had submitted the better article for the year . . . The other HMA awards went to Dave Beggin for "Body Talk" on Hawaii Public Television; Tabby Choy of Ka Leo O Na Kokua, the St. Francis Hospital news; and Tom Donahou of Ka Leo O Hawaii . . .

We congratulate the following on their elections and wish them successful terms:

**Sakae Uehara** was installed as HMA president . . . **William Hindle** was elected president-elect, and **Walter W.Y. Chang** treasurer . . . Outgoing President **Calvin Kam** was elected delegate to AMA and **Herbert Uemura** to speaker of the House of Delegates . . . **Milton Howell** was named vice-speaker of the House when **Dick Ando** declined the nomination. **Russell Stodd** will continue as secretary and **William Iaconetti** as AMA delegate . . .

We should acknowledge the following behind-the-scenes workers who were really responsible for this successful meeting . . . arrangements committee: **Russell Stodd**, chairman, and members: **Charles Aono**, **Walter W.Y. Chang**, **Amelia Jacang**, **Thomas Kosasa**, **James Lumeng**, and **Chester Segawa** . . . golf

tournament: **Ichiro Nadamoto**, chairman, and committee members: **Tom Kobara** and **Don Maruyama**; tennis tournament: **Thomas Au** and **Andrew Don**, co-chairmen; racquetball tournament: **Virgil Jobe Jr.**, chairman; table tennis tournament: **John Spangler**, chairman; 10K run: **Robert Laird**, chairman; and Sportsmen's Night: **Neal Winn**, master-of-ceremonies . . . scientific program committee: **Thomas Kosasa**, chairman, and members: **Steven Berman**, **Russell Hicks**, **Calvin Kim**, **John Kim**, **Wilfred Tashima**, **Irene Wong** . . .

AMA President **Frank Jirka** told the physicians at the 127th annual meeting that "the way medicine is practiced could take a very different and possibly troubling look in the next few years . . . In the turbulent times ahead, there could be rationing of medical care, unprecedented "caps" on the amount individual doctors are allowed to earn, and hospitals going belly up . . .

One of the federal government's efforts to cut the cost of medical care is the proposed Health Care Cost Control Act of 1983, under study by congressional subcommittees . . . This bill would put a cap on all revenues for hospital outpatient and other services and on the earnings of physicians. A hospital or doctor with earnings in excess of the amount authorized would have to put the excess in an escrow account. If a doctor were to have two consecutive years of such earnings, the contents of the account would be forfeited to the government . . .

If this measure should pass, it would be the first time a segment of the population has been told how much it can or can't earn . . . Other federal efforts to control costs include whole new systems of payment many doctors aren't yet familiar with . . . Physicians must learn how these systems work and how they will affect medical care, and must educate their patients as well . . .

Some of the changes start with the Medicare system, which was originally set up to make quality medical care accessible to the poor. The system has become so expensive (with about \$85 billion in federal money supporting it each year) that current efforts to control it will reverse the original intent, limiting care for those who cannot pay . . .

Two such efforts are the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA), which limits Medicare money to hospitals according to a national average cost per type of case and the number of such cases a hospital has, and Diagnosis-Related Groups (DRG), which pay a flat rate for an illness, based on an average cost to treat that type of illness. DRGs will be phased in gradually over the next few years, replacing TEFRA. Because neither of these systems allows much flexibility, physicians may be in for a rude awakening when colleagues say they are spending too much on tests or

keeping patients in hospital too long . . . Hospitals will have to "bite the bullet" when patients are unable to pay their full bills, and some hospitals may not survive.

The DRG concept may move into the private sector, as insurance companies adopt the idea . . . The concept has already been adopted in Kansas and Oklahoma . . . In New Jersey, however, where both public and private medical care are under a DRG system, there is no indication it's cost-effective . . .

The A.M.A. has been monitoring the development of the idea, and recommended to Congress that DRGs be tried on a trial basis in a few places, because A.M.A. felt the concept needed some changes . . . The effect of the new payment systems could mean a kind of rationing and a reduction in medical technology. There might be restrictions placed on heart bypass surgery or rules limiting kidney dialysis treatments to persons under 55 years of age. The U.S. could become like England, where there are 750,000 people on waiting lists for elective surgery . . .

It could happen here! The public's got to understand what's happening and physicians will have to work harder than ever to deliver care in a more cost-effective fashion, said President Jirka.

## HMA 127th Annual Meeting Memorable Lectures . . .

Senile dementia . . . Summarized by **Stanley Batkin**, professor of physiology and neurosurgery, John A. Burns School of Medicine . . . Dementia as such is actually a clinical syndrome, related to a diffuse dysfunction of the cerebral hemispheres, with an associated deterioration and disorganization of mental cognitive functioning, involuntary thought and memory, and then, secondarily, feeling and conduct, and then with onset of impaired capacity to carry out daily activities. Senile dementia of the Alzheimer's type is actually a multisystem disease and may be mediated by several neuronal, neurochemical transmitter- and acceptor-site alterations. As yet the cholinergic system is more important than the other transmitters and hormones . . .

We have mentioned somatostatin, noradrenalin, alpha butyric acid, vasopressors—all may play a part in regulating and modulating this cholinergic system. Dementia is overdiagnosed in elderly people . . . There are at least 50 to 75 different conditions that present with dementia, about half of which are senile dementia of the Alzheimer's type. But, as yet, Alzheimer's disease is considered a diagnosis by exclusion. There is no conclusive diagnostic test as yet for a patient during life. In the early stages, it has a rather insidious onset. It may be physically incapacitating . . . There may be

(Continued on page 422)

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memory loss, spatial disorientation, poor visual and spatial reasoning etc., but eventually, with more cortical damage, one gets the whole picture . . .

It is important to emphasize that dementia, as such, does not equate with normal aging. It is the result of diseased brain with diseased aging. Aging brings about an inevitable decline and disability, which has led to therapeutic nihilism, obviating a careful workup. Unfortunately, our medical textbooks deal mainly with middle-aged or young individuals. They forget that older people have non-specific presentations . . . Their signs and symptoms may be entirely different . . . Dr. **Alex Comfort** relates the following anecdote . . . A 95-year-old lady saw her doctor . . . "My left shoulder is sore." Doctor: "Mrs. So & So, you are 95 years old. You are old, so what can I do?" Lady: "Listen to me. My right shoulder is the same age and it feels fine. So how about treating my left shoulder?"

Remember . . . All that wheezes may not be asthma . . . You have to be careful . . . The cranial sutures may be ossified, but that doesn't mean that the brain underneath is also ossified or shows sclerosis . . . All that masquerades as forgetfulness, confusion and disorientation may not be primary irreversible dementia. It may be a secondary problem such as depression, drug-related, etc., that can be corrected. A JAMA article stated, "The elderly patient needs assessment, not neglect." Senility and dementia, therefore, are diagnostic and not disposable problems. Aging is not a disease. It is merely an unfolding of life's plan . . . It is life and not time that matters in aging. The stereotyping of aging as a drab, weak, hopeless, expendable, disoriented, sexless, spiritless, incompetent and confused end point is completely false . . .

Unfortunately, people who are told to let themselves age by society do so and they fall into the vicious aging cycle trap. They play the role of an old person that society expects of them and they compound their problems. A good deal of aging in our society is sociogenic and not biological. The older skin may show wrinkles—so what! We should wear them proudly as a badge of honor . . . It means we have survived . . .

Older persons should not allow their souls, their self images, and their zests to wrinkle by accepting society's "ageism dictum." "To me," says Dr. Batkin, "ageism in our society is similar to racism. All the TV programs, the things we read are geared to young people. And this, to me, is discrimination. It is not the natural state of older people to become senile and demented. By labeling a person senile or demented, we step into a problem of lack of investigation . . . You are old, senile—so why bother? Aging is here to stay . . . We are all growing older . . .

"Everyday we get older and that's the law . . . It's here to stay and we can't change it, said Butch Cassidy of 'Sundance Kid' . . ."

The homeostatic mechanism decreases with age and probably becomes hemo-stenotic . . . The problem of old age and so-called dementia will increase, and will now be an important health care concern . . . However, with new research in pharmacology, pathology, neurochemistry, biology, etc. there is hope . . . There is encouraging hope—the more we know about neurotransmitters, receptor sites, brain transplants, etc. . . . There is hope that in the next few years, we can take irreversible dementia and put it back into reversible dementia and go back in time . . . It is not theoretically impossible . . . Even with our knowledge now, we can do that . . .

"In the past we knew not what we knew not, but now in the present, we know what we know and in that there is hope for the future, . . ." says Dr. Batkin.

## More on HMA 127th Annual Meeting Memorable Lectures . . .

David A. McCarron, associate head of the Division of Nephrology and Hypertension at Oregon Health Sciences University School of Medicine, spoke on "New Approaches to the Treatment of Hypertension":

"We are beginning to question the value of low salt diets and other conventional treatments for high blood pressure . . . Most doctors these days place high blood pressure patients on diuretics to reduce the water retention in the tissues . . . they give beta blockers to increase blood flow in large vessels lowering blood pressure; and they put patients on low sodium, low cholesterol diets . . .

"Diuretics deplete the system of potassium and adequate potassium is needed for good muscle contraction . . . The beta blockers, while they do increase blood flow in the large vessels, also clamp down on small vessels, depriving the muscles of oxygen. So the combination of the two makes exercise difficult . . . The person fatigues too fast to be able to put out maximum effort."

A 7-year massive U.S. government study of men at high risk for heart attacks because of smoking, high blood pressure, or high cholesterol: one group got routine care from their regular doctors; the other half was given intensive therapy to get them to stop smoking and were placed on diets to lower cholesterol and on medications to lower blood pressure. After 7 years, the researchers found no difference whatever in the death rates. In the group under intensive therapy, there were a number of sudden deaths—of cardiac arrhythmias, not classic heart attacks. It is now suspected that the potassium depletion due to the drugs, combined with

the low cholesterol diet, had something to do with these deaths . . . Potassium loss can precipitate disturbances in heart rhythm and low cholesterol diet deprives the patient of dairy products . . . about 35 to 40% of the potassium in a normal diet comes from dairy products, particularly hard cheeses.

So now, we're thinking that perhaps it is better to choose newer, better drugs to increase blood flow and bring down blood pressure—drugs that do not leach potassium out of the system.

There's also mounting evidence that low sodium diets don't do any good. Another government study showed that the more you use your salt shaker and the more salty snacks you eat, the lower the blood pressure.

It looks now as though the best predictor of blood pressure health is the amount of dairy products an individual eats. Seventy percent of the calcium in the diet is provided by dairy products, and they are a rich source of potassium. It seems as though the natural mix of calcium, potassium, and sodium in dairy foods enhances the benefits of all to the body.

## Elected, Appointed & Honored . . .

A samurai with real papers . . . Dermatologist **Allan Izumi** is a 5th generation Japanese in America and his children, Kristin, Kim, and Robert, are rokusei (or 6th generation). Allan's dad, **Homer**, is 4th generation . . . How come, we ask, when most of us are still 2nd and 3rd generation? It seems that Allan's great-great-grandfather, Gohachiro Namura, was a real samurai with papers, one of 77 samurai sent as the first Japanese embassy mission to the U.S. aboard the USS Powhatan in 1860 . . .

Eye man **Gary Edwards** won 2nd place in a Corporal Klinger Look-Alike contest at the Honolulu Club in a pre-show party sponsored by the Muscular Dystrophy Association. Gary and Randy Hepner, who won by acclamation, were the only two Klingers entered in the race . . . Anyhow . . . he did try . . .

**Claude Caver**, dermatologist and cosmetic surgeon, was re-elected president of the Physicians Protective Association of Hawaii . . . Terry Hassold of the UH med school received a \$50,000 2-year research grant to investigate Down's syndrome . . . **Ronald C.K. Ng** was elected to fellowship in the American College of Physicians . . . **Bruce Chrisman**, dermatologist and cosmetic surgeon, was elected to fellowship in the American Association of Cosmetic Surgeons, a multi-specialty organization . . . **John Chalmers**, deputy state health director since 1979, was honored at a retirement party at the Hawaiian Regent in June . . . **Richard Sakimoto**, Hawaii's first board-qualified ob-

(Continued on page 424)



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## *Kahala Hilton*



(Continued from page 422)

gyn man, received a special citation for distinguished service from the alumni association of Washington University School of Medicine of St. Louis . . . **Danilo E. Ponce**, director of child psychiatry at the University of Hawaii, is the first Filipino physician to become a full professor at UH Med School . . . **Grover Batten** MC'd the 60th anniversary celebration of the Shriners' Hospital for Crippled Children, where he introduced invited guests and former patients . . . **William Hindle**, Straub OB man, was appointed chairman of the National Task Force of the American College of Obste-

tricians and Gynecologists to evaluate "Studies on Techniques for Assessment of Clinical Competence." **Gary Okamoto** was appointed medical director of the Rehab Hospital of the Pacific . . . **Fred Reppun** was honored as "family physician of the year" at the annual meeting of the Hawaii Academy of family Physicians. He was also nominated for the Good Housekeeping magazine "family doctor of the year" award (Sorry Fred, better late than never) . . . **Gary Douglas**, **Stephen Hirasuna** and **Allen B. Richardson** were chosen fellows of the American Academy of Orthopaedic Surgeons back in March . . . **Richard Mamiya** was chosen honorary chairman of the United

Cerebral Palsy Association of Hawaii membership drive and **David Paperny** was elected to the American Academy of Pediatrics . . . **Calvin Sia** has been appointed chairman of the AMA Section Council on Pediatrics and will be the single delegate of the American Academy of Pediatrics to the AMA House of Delegates' meeting . . . **Irwin Schatz** was elected president of the Hawaii Heart Association. **Richard Mamiya** is president-elect; **David Ferguson**, vice-president . . . In February, **Richard Mamiya** received the second Hawaii Communicator Award from IABC Hawaii (International Association of Business Communicators). **Vit U. Patel** was elected president of the Hawaii Psychiatric Society. **George Bussey** is president-elect; **John Pumtzer**, secretary; and **Frank Bucknam**, treasurer . . .

## Sportsmen . . .

**Tetsui Watanabe** retired from an active radiology practice over five years ago . . . With time hanging heavy, Tetsui started running . . . He has run in the last 4 or 5 Honolulu Marathons and it is rumored that he runs with better times than his colleagues **Ed Emura** and **Dick Ando**, who are 10 years younger . . . Now for the past 3 years, Tetsui has been visiting a friend, Wataru Watanabe (no relative), in Seldovia, Alaska, where Wataru has the undisputed reputation of being the best fisherman in the fishing village . . . But Tetsui has never fished in his life and was not about to take up this old fool's sport . . . Something happened this year, however, when his daughter-in-law caught a 50 lb. halibut . . . This nettled Tetsui and spurred him to try his skill at this as yet unproven sport. Under the careful tutelage of his friends, including us, he learned to cast with a borrowed light spinning reel . . . Of course, we had to duck fast whenever he cast his lure, lest he catch us rather than salmon . . . Soon he was catching his limit of pinks and dogs which usually run under 10 lbs. . . . Still, he couldn't let a novice daughter-in-law out-do him, so he went out with Wataru on a halibut fishing trip and caught a record 60 lb. halibut . . . Now, whenever Tetsui talks about fishing, his face flushes and his eyes sparkle . . .

**Marathoners:** In January this year, Maui physician **Paul Ryan**, 37, ran the ultramarathon (62 plus miles) from Hilo to Waimea over the Saddle Road in 8:52:46, and was expected to be one of the leaders in the First Kilauea Volcano Wilderness Marathon and Rim Runs . . .

In the Windward Half Marathon on May 15, physicians **Jim Barahal** and the defending champ, **Jim Gallup**, took first and second places . . .

In May, **Paul Ryan** was the first to finish the 100-mile Ultra, but ended up walking most of the last 10 miles because of shin splints. Paul had won the event in 1978 and 1981 . . .

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**Jack Scaff** received a terrific honor from the JAMA in an article titled, "Important Events in Cardiology, 1940 to 1982." JAMA called the successful completion of the Honolulu Marathon by runners who had previously suffered myocardial infarctions part of a "revolutionary" medical discovery, with supportive scientific data. (from Don Chapman's column)

## Miscellany

"Lions have to be extremely sexy to perpetuate their kind. Eighty-five percent of the cubs die. The males generally die young. And it takes about 1,500 matings to produce one litter. Even so, the lion population is on the rise." (From "Just Checking," Lou Boyd)

\* \* \*

"The man who created the Graham cracker—Sylvester Graham—was a highly vocal health buff. He preached far and wide that people could prevent headaches by limiting their sexual activity to no more than 12 occasions a year." (Also from Lou Boyd)

\* \* \*

Executive to his physician: "I just can't pay your bill, Doc—I slowed down just as you told me to, and I lost my job!"

\* \* \*

A physician had just finished checking a patient who was well past middle age. "Well, old man," he said with a smile, "I can't find a thing wrong with you, but I do recommend that you give up about half your love life." After a long pause, the patient asked, "Which half should I give up, doc, thinking about it or talking about it?"

\* \* \*

A doctor, examining an attractive new patient, beamed, "Mrs. Brown, I've got good news for you." The patient said, "Pardon me, it's Miss Brown." "Oh," said the doctor, "Well, Miss Brown, I've got bad news for you."

\* \* \*

The doctor's new secretary, a conscientious girl, was puzzled by an entry in the doctor's notes on an emergency case: "Shot in the lumbar region," it read . . . After a moment, she brightened and, in the interest of clarity, typed into the record: "Shot in the woods."

## More Miscellany

When WWII ended, France wanted to purchase the Rock of Gibraltar from Britain . . . Britain refused to sell when it learned that France intended to rename the rock fortress "De Gaulle Stone." (As told by our favorite joke swapper, Claire Loo, MSD rep)

\* \* \*

(Contributed by our golfing and tennis friends):

Doctor: "That check you gave me on

your last visit came back."

Patient: "Sorry, Doc, but so did my arthritis."

\* \* \*

The first aid specialist, instructing a class of Girl Scouts, asked, "Why does a surgeon wear a mask when performing an operation?"

One little girl replied: "So that if he makes a mess of it, the patient won't know who did it."

\* \* \*

A doctor told the patient she had a fibroid tumor and that he had to operate immediately. "Don't worry," he said. "Everything will be all right."

"But how can you be so positive," she inquired, "when it is known that 14% die under the anesthesia?"

"My dear lady," explained the physician. "My 14% have already died."

\* \* \*

"But, doctor," said the worried patient, "are you sure I'll pull through? I've heard of cases where the doctor has made a wrong diagnosis, and treated someone for pneumonia who afterward died of typhoid fever."

"Nonsense!" spluttered the affronted physician. "When I treat a patient for pneumonia, he dies of pneumonia."

◇

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# Latrodectus Spider Bites in Hawaii

## Case Report and Literature Review

Stephen R. Weinstein, M.D., and Alfred G. Scottolini, M.D., Honolulu

• Most medically important spiders belong to the family Theridiidae and the genus *Latrodectus*, of which the black widow spider *Latrodectus mactans* is the best known and most dreaded cause of arachnidism in the United States.<sup>1</sup>

Members of the genus occur worldwide in warmer areas (55° north to 50° south), with several species causing documented arachnidism in Europe and the Mediterranean, Southern Africa, Asia, Australia, and New Zealand. Three species are found in the United States. *Latrodectus mactans* has the widest distribution, occurring in all states, with California, Florida, and Virginia having the highest recorded incidence of bites. The black widow was first described in America in 1775 as *Aranea mactans*.<sup>4</sup>

*Latrodectus mactans* was first found in Hawaii at Koko Head and Waikiki in 1925, and was believed to have reached here from the American continent by ship. By 1930, the black widow had proliferated to such an extent as to constitute a menace to pineapple and sugar growers.

### Case Report

A 36-year-old Honolulu woman was bitten by a spider in the left shoulder. The spider apparently had been present in her bedding, and was brought in by the patient and subsequently identified as a brown widow (*Latrodectus geometricus*) by its characteristic red hourglass pattern on the ventral surface (Fig. 1).

The patient presented to the emergency room complaining of severe increasing local pain and tenderness in the left shoulder. She subsequently developed nausea, abdominal pain, and severe generalized tonic muscle spasms, the latter of which were treated with intravenous calcium gluconate. She was given intramuscular Demerol for pain relief and received anti-venom in the emergency room. On admission to the floor, she was afebrile, with a blood pressure of 138/90. There was increased warmth, tenderness, and erythema in the region of the bite on the left shoulder. The remainder of the physical examination was within normal limits, and lab studies were also normal with the exception of an elevated SGOT of 54, which later reverted to normal at 13. A chest X-ray showed no abnormality. Her abdominal pain and hypoactive bowel sounds gave rise to suspicion of ileus, but abdominal series were normal, and this problem resolved. She also complained of chest pain, though electrocar-

diogram, lung scan, and blood gases were all normal. The remainder of her hospital course was benign, she progressed from intravenous to oral fluids, and was discharged home in good condition on a normal diet 6 days later.

### Discussion

#### Identification

The principal American species, *Latrodectus mactans* (black widow), has a jet black color. The male is about 3 mm

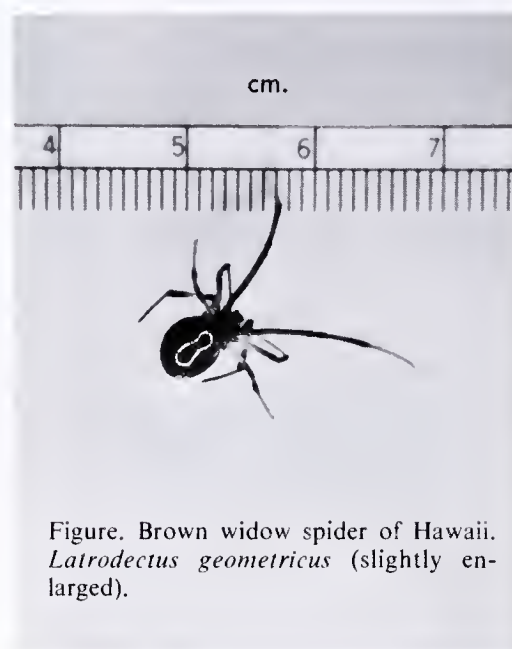


Figure. Brown widow spider of Hawaii. *Latrodectus geometricus* (slightly enlarged).

long, has not been known to bite, and is of little medical importance. The female is up to 15 mm total body length excluding the legs. The body is covered with short black setae, giving a velvety appearance. Immature specimens may be gaily colored with red, yellow, or white dots and bands on the dorsal surface, but in adult females these may be lost.<sup>1,3</sup> The eggs are cream-colored, spherical sacs with a smooth silken texture. The black

widows spin tangled disorderly nets of coarse silk in dark locations. The core of the web, where the spider often spends daylight hours, is a silken tunnel supported by an irregular mesh. Preferred locations are protected from direct sunlight, as in crevices and burrows or under rocks and logs. Near habitations, they are found in garages, storage sheds, or latrines, or near garbage dumps.<sup>1</sup>

*Latrodectus geometricus* (brown widow or gray widow) has a duller color and may be black, brown, or gray. Both it and *Latrodectus mactans* have the characteristic red hourglass-shaped marking on the ventral surface.<sup>1</sup> The venom of *L. geometricus* is about 1/4 to 1/10 as toxic as that of *L. mactans*, the latter being of greater medical importance.<sup>3</sup> A third species, *L. bishopi*, occurs in southern Florida, but there are no reports of bites.<sup>1</sup>

#### Action of venom

The venom is stored in two glands on the cephalothorax, and injected by a connecting duct through 2 curved fangs on the distal chelicerae.<sup>4</sup> The venom appears as a thick translucent yellow-colored oily fluid, and has been separated into 11 protein fractions by gel electrophoresis.<sup>4,8</sup> One of these fractions, with a molecular weight of 125,000, is believed to be responsible for the neurotoxic effect, through its action on the neuromuscular junction.<sup>8</sup>

Venom extract has been shown experimentally to increase the frequency of miniature endplate potentials of the frog neuromuscular junction, through continuing release of transmitter, eventually resulting in depletion of vesicles, synaptic failure, and paralysis.<sup>5,6,7</sup> The venom also has been shown to impair the neuronal presynaptic uptake of amines, though it is not certain whether one or more of the protein components are responsible for these actions.<sup>9</sup>

Increasing the calcium concentration

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Accepted for publication August 1983.

in the external saline bathing solution *in vitro* has been shown to temporarily prevent the onset of neuromuscular block, an observation with important therapeutic ramifications.<sup>7</sup> The mechanism is believed to be a membrane-stabilizing effect of calcium, thereby slowing the uptake of venom.<sup>7</sup> The venom of the male *L. mactans* is less toxic than the female, and that of *L. geometricus* less toxic than *L. mactans*, though the mechanisms of action are believed to be similar.<sup>3</sup> In animal experiments, the *L. geometricus* venom has been shown to be about a quarter as toxic as *L. mactans* venom in guinea pigs and a tenth as toxic in mice.

### Clinical picture

The seriousness of the reaction depends mainly on the amount of venom injected, with other factors being the size of the spider, size of the patient, and number of bites.<sup>4</sup> The first symptom is usually cramp-like excruciating pains in limbs, chest, and abdomen, coming on in 1 to 3 hours, and followed by rigidity and spasm of larger muscle groups. The patient often sweats and salivates profusely, with nausea and vomiting following. In severe cases convulsions and paralysis may result. Other more variable symptoms that have been described include urinary retention, shock, cyanosis, dyspnea, insomnia, priapism, constipation, and pruritus.<sup>3, 4</sup> Local redness, swelling, and tenderness may develop at the site of the bite. The white cell count may be increased in the peripheral blood, and urine may be decreased in amount and contain albumin and occult blood. The cerebrospinal fluid is often under increased pressure.

While most of these clinical symptoms can be explained on the basis of the neurotoxic action of the venom, Weissman et al.<sup>10</sup> reported a case of unusual cardiovascular manifestations after a *Latrodectus* bite. The patient developed atrial fibrillation with labile blood pressure, associated with increased circulating pressor amines, manifested by in-

creased urinary VMA excretion. The symptoms resolved with beta blocker therapy. The mechanism of action for the increased catecholamines might have been the venom-induced impairment of presynaptic uptake of amines.<sup>9</sup>

The mortality from *Latrodectus* arachnidism has been estimated ranging from 4 to 6% in untreated cases.<sup>4</sup> This figure is probably falsely high, since many mild reactions might go unrecognized, or otherwise not come to medical attention. Fisher<sup>11</sup> reports a case of a 36-year-old California man attempting suicide by capturing a black widow spider. He managed to induce it to bite him only after repeated attempts. He was treated successfully, but succeeded in suicide 4 years later with carbon monoxide.

### Treatment

A bite victim preferably should be admitted to a hospital. The Hawaii Poison Center recommends that asymptomatic healthy adults (age 16 to 60) be observed only, though symptomatic patients as well as children, the elderly, and hypertensive patients should be given antivenin. This antitoxin is produced by immunizing horses with *L. mactans* venom, and is available in 2.5 cc vials, each of which constitutes an adult dose. It is safe to begin by injecting 0.5 ml in an extremity where a tourniquet can be applied should a reaction occur. In absence of an adverse reaction, further aliquots of 0.5 cc may be given at 15-minute intervals until a full dose is given.<sup>12</sup> Intravenous 10% calcium gluconate is given to counteract the muscular spasms and neuromuscular blocking effect of the venom, since it apparently stabilizes the presynaptic membrane and decreases venom uptake.<sup>3, 4, 7</sup> Symptomatic pain relief can be obtained with morphine or other narcotic analgesics. Barbiturates have been used to control restlessness. In rare cases of cardiac arrhythmias, beta blockers have been shown effective in overcoming the effects of increased circulating catecholamines.

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# Serum Erythropoietin Levels in Neonatal Polycythemia

Thomas E. Wiswell, M.D., MAJ M.C., Philip G. Pettett, M.D., LTC M.D., and James S. Rawlings, M.D., LTC M.C., Tripler Army Medical Center, Hawaii\*

• Neonatal polycythemia is reported to occur in 2-5% of all newborns.<sup>1,2</sup> Despite this frequency, the etiology of polycythemia is most often unknown. With the exception of twin-to-twin transfusions from placental arterial-venous anastomosis,<sup>3</sup> potential causes of polycythemia have not been fully explored.

The majority of polycythemic infants are full term, appropriately grown neonates.<sup>1,2</sup> Very few cases are found at less than 36 weeks of gestation. Fetal erythropoietin activity follows a similar pattern.<sup>4</sup> Serum erythropoietin levels are low in premature infants, but gradually increase as the infant approaches term. At present it is not clear whether these events are coincidental or represent a potential cause and effect relationship. Erythropoietin activity in the polycythemic infant has not been investigated. Therefore, the purpose of this study was to determine if a relationship existed between erythropoietin activity at birth and neonatal polycythemia.

## Materials and Methods

For a 2-year period, all infants delivered at Tripler Army Medical Center were screened for polycythemia. Upon admission to the nursery, each infant had a capillary hematocrit measured on blood obtained from a free-flowing heelstick. If the capillary hematocrit exceeded 65%, a venous (antecubital vein) hematocrit was obtained. Infants were considered to be polycythemic if the venous hematocrit exceeded 65%.

Polycythemic infants were all treated with a partial exchange transfusion using a 5% albumin solution (Plasmanate, Cutter Lab). Prior to treatment, informed parental consent was obtained for each infant. Exchange transfusions were performed in the newborn intensive care unit. Venous hematocrits following the partial exchange were between 55-60%.

A total of 15 consecutive polycythemic infants were entered into this study. Blood for erythropoietin assay was collected from the first sample withdrawn during the partial exchange transfusion. Control infants were selected from the remaining non-polycythemic nursery population. All infants were consecutively

born and matched to the study infants by gestational age. After explaining the study to the parents, permission was obtained to draw venous blood on each infant at 12 and 24 hours of age. Cord blood (0 time) specimens were obtained on all infants as a routine obstetrical procedure.

Blood samples were centrifuged and separated immediately after collection. The serum was refrigerated at 4°C until the time of assay. All assays were completed within 48 hours of collection. Erythropoietin-stimulating factor (ESF) was measured by the hemagglutination immuno-assay of Lange.<sup>5</sup> Materials for the assay were supplied by J.C.L. Research Co., Knoxville, Tenn. All ESF assays were standardized to a single ESF reference standard. Each assay contained 4 separate test samples; one known standard, one unknown standard (quality control), and duplicate patient samples. The

known and unknown standards for ESF were used to check each assay for reliability. All tests were run by the same technician. Results were reported in milli-immunochemical units (miu) ESF per milliliter (MIU ESF/ml).

## Results

In all, 30 infants (15 polycythemia; 15 control) participated in the study. A comparison of the two groups for birth weight, gestational age, Apgar score, and venous hematocrit is shown in the Table. The only significant difference between the groups was the venous hematocrit ( $p < 0.007$ ).

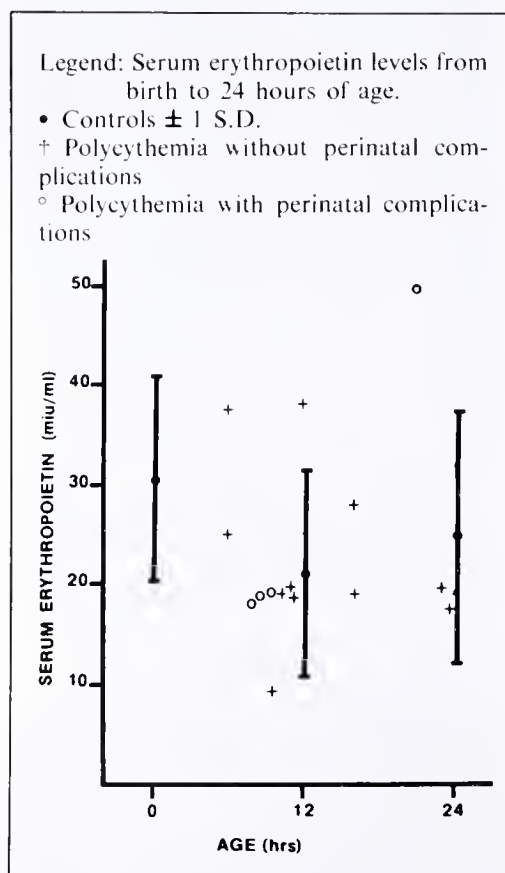
All 30 infants were born at term (38-42 weeks gestation). In the control group, pregnancy, labor, and delivery were uncomplicated. Of the 15 polycythemic infants, 4 (27%) experienced perinatal complications. One infant was small for dates (weight  $< 10$ th percentile), one was born to a pre-eclamptic mother, a third experienced both of these complications, and the fourth was a small-for-dates, discordant "B" twin with asphyxia neonatorum (Apgar scores 3/5). In both pre-eclamptic mothers, blood pressure elevations were mild and responded to rest at home. The discordant twin had no evidence of twin-to-twin transfusion. Two entirely separate placentas were found. The "A" sibling was not anemic. The remaining 11 (73%) polycythemic patients had no perinatal complications.

Serum ESF results are shown in the Figure. Mean values for controls were  $30.4 \pm 10.5$ ,  $20.8 \pm 10.7$ , and  $24.6 \pm 12.9$  ( $\pm 1$  S.D.) miu ESF/ml at 0, 12, and 24 hours, respectively. Although the ESF values at 12 and 24 hours were lower than those at birth, these differences were not statistically significant ( $p < 0.05$ ). All 11 polycythemic infants with normal perinatal histories and 3 of the 4 polycythemic infants with perinatal complications had ESF values within 1 standard deviation (S.D.) of the mean control. One infant had a markedly elevated ESF value (50 miu/ml). This infant had experienced a combined chronic (IUGR) and acute (asphyxia neonatorum) oxygen deprivation.

## Discussion

The results of this study reveal no correlation between neonatal polycythemia and serum erythropoietin activity at birth. Of the 15 polycythemic infants 14 (94%) had ESF levels within 1 S.D. of control means. The only infant with an elevated ESF also had experienced a combination of perinatal asphyxial events.

It is unlikely that this lack of correlation can be explained by deficient fetal/neonatal erythropoietin production. Although there is a wide range of variability, neonatal erythropoietin activity



Figure

Serum erythropoietin levels from birth to 24 hours of age.

\*Newborn Medicine Service, Department of Pediatrics.

The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.



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Type manuscript double spaced, including title page, abstract, text, acknowledgments, references, tables, and legends.

Each manuscript component should begin on a new page, in this sequence:

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Legends for illustrations

Illustrations must be good quality, unmounted glossy prints usually 12.7 by 17.3 cm. (5 by 7 in.) but no larger than 20.3 by 25.4 cm. (8 by 10 in.).

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**TEXT:** The text of observational and experimental articles is usually—but not necessarily—divided into sections with the headings: Introduction, Methods, Results, and Discussion. Long articles may need subheadings within some sections to clarify their content, especially the Results and Discussion sections.

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Include numbers of observations and the statistical significance of the findings when appropriate. Detailed statistical analyses, mathematical derivations, and the like may sometimes be suitably presented in the form of one or more appendices.

**Results:** Present your results in logical sequence in the text, tables, and illustrations. Do not repeat in the text all the data in the tables and/or illustrations: emphasize or summarize only important observations.

**Discussion:** Emphasize the new and important aspects of the study and conclusions that follow from them. Do not repeat in detail data given in the Results section. Include in the Discussion the implications of the findings and their limitations and relate the observations to other relevant studies. Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by your data. Avoid claiming priority and alluding to work that has not been completed. State new hypotheses when warranted, but clearly label them as such. Recommendations, when appropriate, may be included.

**ACKNOWLEDGMENTS:** Acknowledge only persons who have made substantive contributions to the study. Authors are responsible for obtaining written permission from everyone acknowledged by name because readers may infer their endorsement of the data and conclusions.

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## Erythropoietin (Continued from page 428)

reaches a peak near the time of birth.<sup>6,7</sup> Hypoxic episodes during the neonatal period (cyanotic congenital heart disease, hemolytic anemia) can result in an increased erythropoietin production.<sup>4,6</sup> Prior to birth, the fetus can respond to significant perinatal complications in a similar fashion.<sup>7,8</sup>

dence of erythropoietin activity is absent at birth. In the healthy, term neonate, erythropoietin activity falls by 75-80% during the first 5 days of life.<sup>6</sup> However, neonatal red blood cells have a mean survival time of 60 days. Thus, polycythemia could simply represent differences in survival/half-life of red cells and erythropoietin. An antepartum hypoxic episode could result in increased erythropoietin activity and elevation of venous hemato-

TABLE 1. Comparative features of the polycythemia control infants\*

	Control	Polycythemia
Birth weight (grams)	3214 ± 94	3207 ± 203 (NS)†
Gestational age (weeks)	39.9 ± 0.2	39.8 ± 0.3 (NS)
Apgar scores		
One minute	7.6 ± 0.3	7.7 ± 0.5 (NS)
Five minutes	8.9 ± 0.2	8.8 ± 0.4 (NS)
Venous hematocrit (%)	48.6 ± 1.9	68 ± 0.5 (p < 0.007)

\* data expressed as mean ± S.E.M.

† non-paired "t" test

Measurement of erythropoietin in the amniotic fluid of the Rh-sensitized pregnancies suggests that the anemic fetus may increase erythropoietin production.<sup>8,9</sup> Moderate-to-severe maternal preeclampsia, post-datism, and fetal death frequently lead to increased erythropoietin activity at birth.<sup>4</sup>

It is possible that erythropoietin stimulation of red cell production occurs far enough in advance of delivery that evi-

crit with subsequent ESF degradation prior to delivery. Such an event would have to occur late in pregnancy. Erythropoietin activity is low before 36 weeks gestation<sup>4</sup> and polycythemia rarely occurs in prematures.<sup>1,2</sup> Depending upon the circumstances, clinical detection of the hypoxia episode might be difficult. Correlation of events such as fetal heart rate abnormalities, nuchal cord, and meconium staining might prove helpful.

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